EMPLOYMENT PSYCHOLOGY:

THE INTERVIEW

Bellows and Estep

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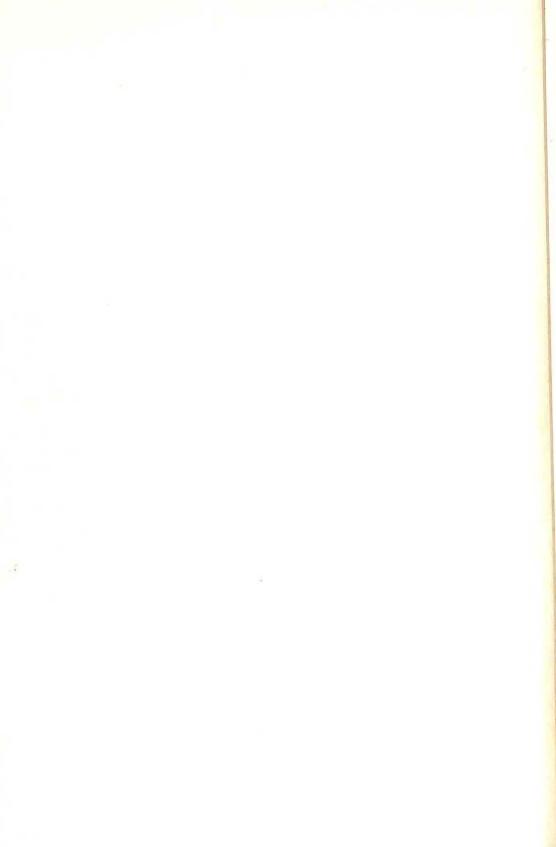
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Dedicated to workers, past and present, who have labored in quest of less biased ways of managing human resources

PREFACE

This book has been designed and written for professional interviewers and for students of applied psychology who desire to become acquainted with the uses and limitations of the interview in selection of personnel. The book covers mainly employee selection and placement interviewing problems. Some of its content is concerned with psychological procedures, including trade tests, nontest predictors, and job analysis methods.

We have worked toward a simple, relatively nontechnical presentation of the material that requires no previous courses or training in psychological method. We have endeavored to clarify concepts, findings, and methods without omitting technical essentials.

There are two ways to view the scope of the interview: a strict delimitation, to include only observation of the psychological make-up of the applicant during the interview per se; and a general view, to include related sources of material, such as items from the application blank or records. If the first approach is used, there is very little of value to offer for improving employee selection. Recommendations could be made at once to do away with the interview—to omit it and to seek and use more valid, more practical selection procedures. But if the second approach is adopted, other techniques related to the interview may be evaluated. With the general, broader approach, the interviewing process, as a selection tool, may be improved for the future.

How can interviewers train themselves? In organizing and developing the content of this work during the past six years, we have had this ques-

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The Use of the Interview for Selection

The interview is used by most managers for personnel selection. They use it because they believe they can tell from this brief meeting whether or not they should hire a person. They feel they can "size up" a person during a face-to-face conversation. Most of us have similar faith in our ability to judge others.

However, it is not possible to learn very much about a stranger in the ten or twenty minutes available to an employment manager or interviewer. Many mistakes are made. Some individuals who make good impressions in the interview may be utter failures on the job. Others who appear wishy-washy, lazy, or uninterested may turn out to be the best employees if given a chance to perform.

Managers who have erred in their past judgments made on the basis of interviews wish for some sure-fire system for categorizing people according to the jobs they can successfully do. This would, of course, be utopia for the employment man.

Suppose we were all born in some "brave new world," [1] the kind of utopia in which our psychological make-up would be determined before birth. Suppose, further, that our training and development were so controlled that each of us were predetermined and classified in terms of a set

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[1] See Aldous Huxley's *Brave new world* for a look at this kind of utopia. (Garden City, N.Y.: Garden City Publishing Company, Inc., 1933, 311 pp.)

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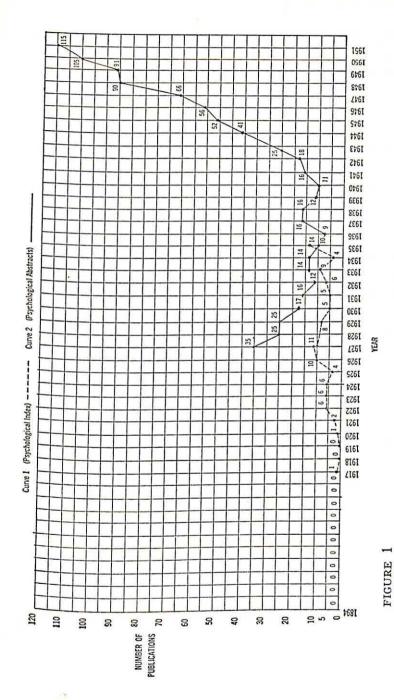
of psychological and physical characteristics suitable for the particular job we were to do. People could then be grouped into classes, labeled "A," "B," "C," "D," and so on, one class for each kind of job, in accordance with their predetermined job qualifications. In this utopian world there would be no need for the selection interview. Each person would have been so systematically nurtured and developed from the time of birth that he would have maximum skills, potentialities, and appropriate attitudes for the job for which he was destined.

We do not live in such a utopia. Such precision in matching men with jobs by labels affixed at birth is, of course, merely imaginary. The wish for a sure-fire system is far from fulfilled at the present time. The reason can plainly be seen: people differ in many aspects. The nature and extent of these differences determine success on various types of jobs. One person may be strong physically, another weak; one man is brighter, more alert than another; there are differences in the amount of schooling and training received by individuals and there are differences in interests. So we do have need for methods for selection and placement of new employees. The interview is one of these personnel methods.

Little is known about the interview. There is today much haphazard use of it. This does not imply, however, that scientists have not done some careful work on it. They have. Long before the turn of this century, and before scientific study of the interview, philosophers treated some of its problems at length. The interview, important as it has always been in the affairs of the world, has apparently received documentary attention as an occupational and professional technique only within the last century. In the *Atlantic Monthly* of July, 1874, reference was made to the "recent appearance of the interviewing reporter" in an article concerning reporters' news items.[2] By 1887, the "interviewing reporter" was apparently a well-known, but not entirely approved, personage, as evidenced by a semihumorous complaint about his "footpad" methods of reporting an interview.[3]

It is within comparatively recent years that interviewing in connection with other than journalistic activities has been recognized as a definite method of investigation, and that some attempt has been made to analyze

[2] F. B. Sanborn, Journalism and journalists, *Atlantic Monthly, 34:* 1874, 64.
[3] W. E. Bingham, The ethics of interviewing, *New Princeton Review, 3:* 1887, 129.

FIGURE 1

NUMBER OF PUBLICATIONS ON THE INTERVIEW CITED IN THE PSYCHOLOGICAL INDEX (1894–1935) AND IN PSYCHOLOGICAL ABSTRACTS (1927–1951)

the fundamental principles and elements of the interview in order to increase its efficiency and the reliability of its results. Figure 1 shows the growth of activities in the study of the interview primarily by psychologists, during the period 1894–1951. Curve 1 in the figure shows year by year the number of articles and books about the interview listed in the *Psychological Index*. During the period 1894–1935, only 106 of the 150,800 publications were judged to be about the interview. Curve 2 in the figure shows the number of publications listed in *Psychological Abstracts* for the period 1927–1951. In *Psychological Abstracts* 905 of the 136,100 publications were judged to deal with the interview.[4]

Although the *Psychological Index* has been surveyed back to its first volume in 1894, it is interesting to note that interview articles did not appear until 1917. In 1926 Bradshaw was able to select and list 51 pamphlets and articles, 28 books, and 16 bibliographies in this field.[5] Most of the early articles, those appearing before 1929, were discursive rather than statistical. In later years more objective, quantitative studies have appeared, but of the 905 cited in *Psychological Abstracts* (1927–1951) it is estimated that less than half could be classified as quantitative. About 500 references relating to the interview have been included in the bibliographies of the present volume.

The interview has been called the most used and the least useful of the available personnel tools. A survey made in 1947 showed that 99.5 per cent of the 325 business and industrial concerns sampled used the interview in the selection of their employees from applicant groups.[6]

We could speculate a little on how many selection interviews take place each year. Uhrbrock has described the experience of one company during the period 1941–1947, as an illustration of the ratio of the number of interviews to the number of persons actually hired.[7] Although in 1944

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[4] The *Psychological Index* listed titles of psychological books and journal articles and was published from 1894 to 1935. *Psychological Abstracts,* published since 1927, contains short noncritical abstracts, from both American and foreign sources.

[5] F. F. Bradshaw, The interview: a bibliography, *Journal of Personnel Research,* 5: 1926–1927, 100–103.

[6] Walter D. Scott, Robert C. Clothier, and William R. Spriegel, *Personnel management: principles, practices, and point of view* (4th ed.; New York: McGraw-Hill Book Company, Inc., 1949), p. 574.

[7] Richard Stephen Uhrbrock, The personnel interview, *Personnel Psychology, 1,* 1948, 275–276.

the number of interviews was down 66.49 per cent from 1941, the number of hires had increased from 2190 to 2807. (See Table 1.) During this period

TABLE ONE

INTERVIEW AND EMPLOYMENT TRENDS
IN ONE COMPANY, 1941–1947

YEAR	AVERAGE ENROLLMENT	TOTAL INTERVIEWS	PERCENTAGE DECREASE INTERVIEWS FROM 1941	TOTAL HIRES	NUMBER OF INTERVIEWS PER HIRE
1941	7321	45,688	——	2190	20.86
1942	7011	33,111	27.53	2441	13.56
1943	6401	19,115	58.16	2885	6.63
1944	6430	15,311	66.49	2807	5.45
1945	6274	14,413	68.45	2400	6.01
1946	6650	16,499	63.89	1734	9.51
1947	7699	37,912	17.02	3167	11.97

Source: Richard Stephen Uhrbrock, The personnel interview, *Personnel Psychology,* 1: 1948, 276.

almost anyone who applied for work was utilized in some position. Even so, there were 5.45 interviews per hire in 1944. According to the Bureau of Labor Statistics, about 30,000,000 workers change jobs each year. These workers may apply to several different firms before finding suitable employment. For each individual employed there are perhaps, on the average, five applicants considered. A total of about 150,000,000 interviews must take place annually for the selection of personnel alone.

Consider the cost. If we assume the average expenditure for each selection interview to be $5 (and this is rather conservative when we think of costs: recruiting applicants, overhead, interviewers' salaries, and so on), we can estimate that the total yearly expenditure for employment interviewing in the United States would run to some $750 million!

It is regrettable that the usual employment interview, widely used as it is, is not very helpful in predicting which applicants will be successful.

Reasons will be given later on to support this statement. Let us, then, discuss the nature of the interview, and some of its problems and limitations, in order to discover approaches leading to its improvement.

The Nature of the Selection Interview

We may consider the selection interview in two lights: as a *conversation* between an employment representative and an applicant, and as part of a *process* which includes not only the verbal meeting but also the use of other selection tools such as company application forms, trade tests, psychological tests, and references from former employers.

We shall see later on that the conversation between the two parties of the interview is somewhat undependable as a basis for deciding whether or not to hire. There are other tools available to the interviewer, however, which he may use before, during, and after the face-to-face conversation with the applicant to sharpen up his decisions to hire. There is not much point in trying to judge intelligence, for example, if one can give an intelligence test and get a more reliable and realistic estimate. The interviewer learns to depend upon tests and verified procedures for obtaining objective information about the applicant. In this way he frees himself to obtain other values which an interview can yield—namely, judgments about appearance, bearing, voice, and language.

We shall discuss the interview in both ways, as a conversation and as a process, working toward improved selection.

The interview is an interchange—a give-and-take—between an interviewer and an interviewee. It has been called a "conversation with a purpose." [8] As a method of observation it has the advantage of yielding certain kinds of information which probably cannot be obtained in any other way.

The interview provides a setting in which to observe a prospective employee. This setting gives only a small cross section of an applicant's behavior. In a sense, this observation of behavior is a kind of sampling when a whole area cannot be covered. It is somewhat analogous to the mining engineer's sampling of a location for determining whether a valuable ore is available. Suppose he is working in an area of ten square miles. If he

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[8] Walter Van Dyke Bingham and Bruce V. Moore, *How to interview* (3d rev. ed.; New York: Harper & Brothers, 1941), p. 1.

drills only one shaft, this would be an inadequate sample of the area. If he digs up the entire ten square miles, this would be a complete sample. Some amount of sampling between these two extremes is probably sufficient and desirable. The employment interviewer has available to him only a sparse sampling of the applicant's behavior. It would be ideal if the interviewer could have a more complete sampling by observing the applicant for long periods of time, in his previous work situations and in social situations. This, of course, is not feasible. The interview has developed as the traditional way for observing responses and inferring attitudes of the applicant with the hope, rarely fulfilled, of making accurate predictions as to his future performance on a job.

The length of time of selection interviews differs a great deal. Length varies from a minute or two up to many hours, depending upon the situation and the importance of the job for which the applicant is being considered. Drake, who surveyed sixty-five companies, found that the most frequently given length of time for the final selection interview was 15 minutes for unskilled workers, 30 for skilled workers, 30 for clerical workers, and 45 for technical workers.[9] It would seem, other things being equal, that the more time used for observation the better the sampling and the more reliable and valid the resulting inferences and judgments.

Uhrbrock obtained complete stenographic reports on seven employment interviews. "Each interview was approximately twelve minutes in length. The number of words spoken by applicants ranged from 159 to 651. The interviewers spoke from 437 to 723 words. Applicants did one-quarter to one-half of the talking while interviewers did from one-half to three-quarters of the talking." The best interviewer in the group talked 48 per cent of the time.[10]

In an analysis of sixty interviews electronically recorded in the employment offices of eight companies, Daniels and Otis found that the average interview lasted 10 minutes and that in this time the interviewer spoke 5.72 minutes and the applicant 3.02 minutes.[11] About 58 per cent of the

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[9] Frances S. Drake, *Manual of employment interviewing* (*Research Report No. 9,* New York: American Management Association, 1946), p. 21.

[10] Richard S. Uhrbrock, Analysis of employment interviews, *Personnel Journal,* *12:* 1933, 98–101.

[11] Harry W. Daniels and Jay L. Otis, A method for analyzing employment interviews, *Personnel Psychology, 3:* 1950, 425–444.

interviews were about factory jobs and the remainder were about office jobs. However, there was considerable variation from one company to another. The average interview in one company lasted 5.01 minutes. There the interviewers spoke an average of 2.36 minutes and the applicants an average of 1.83 minutes. In another company the average length of interviews was 13.39 minutes. In this company the interviewers spoke an average of 8.75 minutes and the applicants an average of 2.57 minutes.

But even with rather long periods of observation by a single interviewer, the interviewer himself becomes an important influence, as we shall see. From a brief observation he tries to round out his impression of the applicant by filling in missing information to make a judgment. He obtains information "out of the blue" in filling in missing aspects of the individual. Most interviewers admit this. The judgment he makes is based upon minimal cues, upon momentary observations, and upon very incomplete evidence. In this sense the interview is a highly clinical device.

The selection interview per se is, then, a method by which behavior samples may be observed for the purpose of making judgments about the future on-the-job behavior of the applicant.

Problems in the Interview

A number of problems are inherent in the very nature of the selection interview. The interviewer observes segments of behavior to judge the fitness of the applicant for employment for a particular group of tasks or for a job. The nature of the interview makes this observation highly unsystematic. Setting up rigid rules to follow in each interview might restrict the free exchange of information between interviewer and applicant.

Its unsystematic nature makes the interview quite different from other more objective selection techniques, such as psychological testing. The conditions for testing, the time allowed, and the questions asked are much, much more systematic and rigidly controlled than is the case in the interview. The examiner consistently must use the same timing and procedures for all applicants. He comes out with objective scores of their performance on the tests. Test scores are handled as one would handle the measurement of, for example, hardness of steel, with no differences in treatment allowable

from one sample to another. Regardless of the examiner, the same score would be expected to result for the individual if the same setting and directions were used during the examination. A disadvantage of the use of tests for selection, some say, is that the examiner does not get what has been called a "clinical picture" of the individual.

While psychological testing is highly objective, subjectivity is a problem inherent in the nature of the interview. The word "subjective" here implies that the decisions of the interviewer are based upon his opinion, which is subject to his personal biases and prejudices. His attitudes may differ from one applicant to the next. These attitudes contain bias—errors often made in judging others will be the subject of a later chapter. We shall see how the interviewer himself enters the picture and significantly influences the results of the interviews he conducts.

Another problem in the interview is how to quantify the results. To be sure, the interviewer may use a form to rate the applicant on his suitability for the job; these ratings may themselves be scored by some coding system applied to the scale. However, this procedure yields results quite unlike the quantitative measurements available from psychological tests.

Furthermore, it is difficult to record results in a fashion which permits ready reference and comparison. Some interviewers attempt to record the replies of an applicant as he makes them. In an interview the very fact that the interviewer tries to take notes on what is being said may interfere with the rapport he has established with the interviewee.

The interview at the present time lacks reliability, validity, and utility. We do not know much about how to conduct an interview; nevertheless the interview presents many problems for the evaluation of its effectiveness—problems in the recording of responses, in the quantification of results, and in the control of conditions involved in the interview. These factors which make the interview difficult to work upon in a scientific way explain why it has been said that the interview is the "oldest and least scientific" of various personnel selection methods that may be utilized.[12]

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[12] The interview—the oldest and least scientific form of selection, *Personnel* (American Management Association), *18:* 1942, 232–238.

Why Use Interviews?

Walter Bingham has asked in his column "Today and Yesterday" [13] the inevitable question which most of us would like to have answered: If we now have available more objective selection procedures, such as application blanks validated item by item for the prediction of the most successful long-term employees, as well as psychological and trade tests which have been shown to be reasonably valid for prediction of success on various jobs in the company, then why bother with the selection and training of proficient interviewers? Why not save the salaries of interviewers and do hiring in a more objective manner by the objective techniques?

Bingham says you're not really serious when you ask such questions. All of us know that skilled interviewers will always be at a premium in every well-run business. Four duties of the employment interviewer will never be delegated to a computing machine, according to Bingham:

(1) He must answer fully and frankly the applicants' questions about your business, the job and the working conditions. Who has invented a regression equation which will do that? (2) He must convince the man he is interviewing that yours is a good firm to work for since it furnishes such and such opportunities for growth and advancement (if it does). In other words, he must be skillful in selling your firm to the applicant. (3) He must steer the applicant toward a job for which he is better suited, if there is one somewhere, lest he discover that job and shift to it only after you have spent a few hundred dollars in training him. (4) Finally, the interviewer should leave the prospect, in any case, with the feeling that he has made a personal friend. [14]

Bingham's point of view is well taken. [15] Because of such reasons, because of everyone's faith in his ability to judge people in a face-to-face conversation, and because applicants like some assurance of personal treatment, the

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[13] Walter Van Dyke Bingham, Today and Yesterday, *Personnel Psychology*, 2: 1949, 272–274.

[14] *Ibid.*, pp. 273–274. Reprinted by permission of *Personnel Psychology*.

[15] See also, in this connection, *Marion A. Bills*, The importance of the interview, in *Experience with psychological tests* (*Studies in Personnel Policy No. 92;* New York: National Industrial Conference Board, Inc., 1948), pp. 28–30; and W. J. E. Crissy, The employment interview—research areas, methods, and results, *Personnel Psychology*, 5: 1952, 73.

interview remains widely used. To make it useful, as well, we prefer to recommend trying to improve it through research in the development and evaluation of ways of conducting the interview; and at the same time we wish to emphasize improved use of supporting tools. Improvements in technique lead toward a higher degree of objectivity as well as toward better ways of recording and handling data derived from the interview.

Summary

Survey information shows that virtually all of the firms sampled use the interview for personnel selection. Although widely used, it is nevertheless one of the "least scientific" of the several available personnel selection methods. Problems inherent in the nature of the interview have made scientific research on it difficult. Some work has been done; much more is needed. At the present time the interview lacks reliability, validity, and utility.

Despite its shortcomings, it is favored as a means of getting a "clinical picture" of the applicant. It is a face-to-face contact which furnishes the employment interviewer an opportunity to observe segments of the applicant's behavior. From this observation and from other objective information, he forms his decision as to whether or not to hire the applicant. Judgments made on this sparse sampling of observed behavior have often been wrong, partly because the interviewer himself influences the interview through his own biases and prejudices. However, rather than recommend that the interview be abandoned, we would prefer to encourage the development of research on ways of conducting and evaluating the interview, with emphasis on use of more valid supporting data.

BACKGROUND AND POINTS OF VIEW

False Starts

Some personnel managers and interviewers today actually use such false techniques as astrology, graphology, phrenology, and physiognomy during the interview for the selection of their employees. The popularity of these various "systems" had a rapid growth during the last half of the nineteenth century. They are pseudo sciences, "sciences" that belong to the underworld of psychology. Contemporary marketers of these false techniques generally intend to defraud. They still sell these methods to unwary people who are interested in so-called short-cut methods for evaluation or improvement of personnel.[1]

One of the more widely known of the illegitimate systems that purports

[1] An interesting account of their methods of operation and the variety of rackets they offer to a gullible public is Lee Steiner's *Where do people take their troubles?* (Boston: Houghton Mifflin Company, 1945, 265 pp.) Other general books on where people take their troubles are H. G. Seashore, *All of us have troubles* (New York: Association Press, 1947, 50 pp.); and Dorothy Yates, *Psychological racketeers* (Boston: R. G. Badger, 1932, 232 pp.). The reader will be amply repaid by reading James Reid Parker, The new efficiency, *New Yorker, 27:* 1951, 24–26. An impartial, damaging critique on dianetics, a pseudo science which its proponents claim will enable the emotionally disturbed person to become normal and even raise his intelligence level is available to the interested reader: Dianetics, *Consumer Reports,* August, 1951, pp. 378–380. Concerning dianetics the American Psychological Association voted to adopt a resolution that "these claims are not supported by empirical evidence of the sort required for the establishment of scientific generalizations."—*American Psychologist, 5:* 1950, 548–549.

to assess psychological aspects of job applicants is physiognomy. This is a fallacious method for inferring "personality traits" from physical characteristics such as the shape of the chin or nose, the color of hair or eyes: "I don't trust him; he has shifty eyes and a weak chin." Studies have shown that there is no relation between facial characteristics and job performance, but, unaware of them, many people habitually depend upon this fallible procedure for personality evaluation. Much of the current use of photographs in employment offices for selection is related to this pseudo method.

Another pseudo science similar to physiognomy is phrenology (also called craniology or cranioscopy). Phrenology was developed during the early part of the nineteenth century by an Austrian, Franz Joseph Gall. Gall prepared an impressive though specious treatise on the relationship of the bumps of the skull to psychological characteristics. He set up what appeared to be a systematic method. He and his collaborators, notably Spurzheim, constructed detailed charts of the areas of the brain in which thirty-seven "faculties" or alleged traits of character were supposed to reside. He assumed that development of certain traits resulted in growth of the brain and skull in areas concerned with those traits. It is unfortunate that the system was widely used before scientific research disproved its basic assumptions. Phrenology persists, even today.

Graphologists claim validity for their method of determining personality characteristics from samples of handwriting. Some graphologists have urged personnel managers to let them study the handwriting of their applicants before making the decision to hire. Evidence for the effectiveness of graphology is not conclusive enough, however, to allow it to replace other more valid selection techniques. Crider worked with two graphologists, one of whom had practiced graphology for about twenty years, the other ten years, before going back to school to major in psychology and to obtain a master's degree in vocational guidance. He discussed with the graphologists the traits which thirteen well-known standardized psychological tests were developed to measure. He then asked them to judge some handwriting samples on these same traits. Three observations were made by the author:

(1) The correlations indicate the graphologists do not agree with what the psychological tests purport to measure. (2) The two graphologists do not agree with each other. (3) [The graphologist with twenty

years' experience] agrees highly with himself, indicating that whatever he ranks he ranks consistently.[2]

Graphology, if studied more by legitimate personnel research workers, may have more promise for the future than physiognomy and phrenology.

The History of Interview Psychology

It seems desirable for everyone interested in the interview to know some of its history. The history of psychology that has given us our present heritage of interview knowledge and technique, meager and inadequate as it is, is of importance to interviewers, for this background will help set the stage for revealing effective approaches to improvement of the selection process, discussed in the later chapters of this book.

EARLY POINTS OF VIEW

Since the dawn of the history of man there has been the urge to describe and understand the mind. When early man sought to describe psychological phenomena, he used naïve approaches. The small child today plays with a mechanical toy, and, observing its motion, personifies it. The toy is alive. There is a little person, or an animal, within. For him, problems are solved satisfactorily by universal personification. This is the "animistic" mode of solution. It is a primitive attempt to solve a problem of nature.

A radical departure from the previous viewpoints of psychologists was taken by Watson in 1912. He believed that the mind was not a fit subject matter of psychology—neither its content, its origin, nor its alleged "spontaneous force." In fact, Watson denied that there was such a thing as "mind." He said that in order to describe psychological phenomena all we need to do is to describe behavior. The science of psychology for Watson was simply the description and prediction of behavior.[3] Watson, of course, exposed himself to vigorous criticism from many sides. The German psy-

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[2] Blake Crider, The reliability and validity of two graphologists. *Journal of Applied Psychology, 25:* 1941, 323–325.

[3] John B. Watson, *Behaviorism* (New York: W. W. Norton & Company, Inc., 1925), p. 251.

chologists were particularly rigorous in their protest. Watson's viewpoint was thought to be a very extreme one indeed. Nonetheless, the psychology of the behaviorists was objective and observational. Behaviorists said that behavior could be impersonally observed, impartially measured. They were interested in how learning takes place—in how individuals became skillful in work situations. Behaviorism furthered the development of measurement, and indirectly sharpened up ways of getting at aptitude and performance differences. Watson's extreme views helped prepare the soil for the slow growth of industrial psychology and personnel research.

THE STUDY OF PERSONALITY

The history of attempts by man to attain systematic approaches to understanding personality, while long in number of years, has been short in terms of useful results. Psychological man is extremely complex, difficult to analyze and appraise. "Personality" has evaded objective measurement because of the elusive nature of its variables. There have, however, been a number of systematic approaches: these are represented in a survey by Allport of methods for studying personality, shown in Figure 2.

Of the methods entered in Figure 2, only one is very widely used by interviewers. This is the common-sense or "intuition" segment of the chart. To be sure, the interviewer may utilize some of the fifty-two other segments of the chart. He may make particular use of Segment VI, Rating. Some interviewers use a rank-order rating scale or a scoring scale as an aid to the interview. Some use a so-called psychograph, a device for recording observations on several different aspects of the individual being studied. It is not unusual for the interviewer to use standardized psychological tests (Segment VII in the figure). However, the remaining methods which psychologists use for observation and interpretation of personality are rarely employed in the typical industrial or business personnel interview.

Are there a "sales type," a "clerical type," an "executive type"? Most lay interviewers believe they can type applicants in this way. They attempt to get at groups of traits which they believe are characteristic of a "type" of person. Psychologists who have studied the interview by scientific methods have not been able to agree upon a list of traits that make up the differ-

A circular diagram titled with center label "OBSERVATION AND INTERPRETATION".

Outer ring sectors (Roman numerals):

- I STUDIES OF CULTURAL SETTING
- II PHYSICAL RECORDS
- III SOCIAL RECORDS
- IV PERSONAL RECORDS
- V EXPRESSIVE MOVEMENT
- VI RATING
- VII STANDARDIZED TESTS
- VIII STATISTICAL ANALYSIS
- IX MINIATURE LIFE-SITUATIONS
- X LABORATORY EXPERIMENTS
- XI PREDICTION
- XII DEPTH-ANALYSIS
- XIII IDEAL TYPES
- XIV SYNTHETIC METHODS

Numbered methods:

1 COMMON SENSE "INTUITION"
2 ANALYSIS OF HEREDITY
3 ETHOLOGY
4 SYNTACTICAL ANALYSIS
5 PSYCHO-LEXICAL ANALYSIS
6 BIOCHEMICAL CORRELATES
7 ENDOCRINOLOGY
8 CONSTITUTIONAL TYPES
9 PHYSIOGNOMY
10 DOCUMENTARY SOURCES
11 WORK ANALYSIS
12 TIME BUDGET
13 CONDUCT FREQUENCY
14 SOCIOMETRICS
15 TOPOLOGICAL PSYCHOLOGY
16 DIARIES
17 SYSTEMATIC GUIDES TO SELF-STUDY
18 PERSONAL CORRESPONDENCE
19 THEMATIC WRITING
20 FIRST IMPRESSIONS
21 DETAILED ANALYSIS
22 PATTERN ANALYSIS
23 GRAPHOLOGY
24 STYLE ANALYSIS
25 RANK ORDER SCALE
26 SCORING SCALE
27 PSYCHOGRAPHY
28 STANDARDIZED QUESTIONNAIRES
29 PSYCHOMETRIC SCALES
30 BEHAVIORAL SCALES
31 DIFFERENTIAL PSYCHOLOGY
32 FACTOR ANALYSIS
33 INVERTED FACTOR ANALYSIS
34 TIME-SAMPLE
35 VOCATIONAL MINIATURE
36 TRAP-SITUATION
37 RECORDS OF SINGLE FUNCTIONS
38 RECORDS OF COMPLEX FUNCTIONS
39 EXPLICIT FORECASTING
40 FORECASTING OF TRENDS
41 PSYCHIATRIC INTERVIEW
42 FREE ASSOCIATIONS
43 DREAM ANALYSIS
44 HYPNOTISM
45 AUTOMATIC WRITING
46 ANALYSIS OF FANTASIES
47 SCHEMATA OF COMPREHENSIBILITY
48 ANALYSIS OF COMPREHENSIBILITY
49 LITERARY CHARACTEROLOGY
50 MATCHING
51 IDENTIFICATION
52 COMPLETE PSYCHOLOGICAL INTERVIEW
52 CASE STUDY

FIGURE 2

A SURVEY OF METHODS OF STUDYING PERSONALITY

Source: Gordon W. Allport, *Personality* (New York: Henry Holt and Company, 1937), p. 370.

ent so-called types which lay people often talk about, nor is it generally supposed by these experts that experienced interviewers can agree on such a list.

"Traits" of personality as such may be said scarcely to exist as individual units. The word "trait" itself is quite difficult to define. Traits are

dynamic and ever-changing. They are not unitary in the sense that they are indestructible or analyzable units. They move and shift depending upon the individual's motives, which themselves change from one time to another.

If traits were stable, set, and unchangeable, the problem would be simpler. Then it would be necessary for the interviewer merely to define and identify the traits. He would have a way of classifying applicants for jobs (provided he knew the characteristics or "traits" required on the different jobs or job families). Such is not the case; hence interviewers' judgments lack validity. It is evident that we are confronted by a very complex problem, especially when the purpose is to make judgments and interpretations for predicting the future job behavior of an applicant.

We may say, without any hesitation at all, that virtually all interviewers could improve their approaches by increasing their knowledge of the problems of personality. This is especially significant when we consider that even the best verified techniques applied to the interview have many limitations. A basic error committed by interviewers is the very fact that the interviewer feels too sure of himself and his ability to judge human nature. He often does not appreciate the limitations of his judgments. Erroneous notions of the way human beings behave are deeply imbedded in our literature and culture.

Everyone—even the veteran psychologist who has studied the field for a lifetime—falls into these errors from time to time. Our everyday habits of speech, our language, both written and spoken, our cultural behavior patterns cause us to fall into these errors. We have developed many clichés of speech and writing that strongly suggest certainty of judgments, whereas experimental verification shows that such judgments are neither reliable nor valid. Characteristics of men such as honesty, loyalty, reliability, industriousness, and other designations that many interviewers use habitually are very poorly defined, and are impossible to observe during the interview situation. Many of these so-called characteristics are abstractions and can be obtained only by inference and not by observation during the interview. What we are trying to observe when interviewing for assessing personality are, in reality, differences between people, called, in the parlance of the psychologist, "individual differences."

DIFFERENCES AMONG PEOPLE

Interviewers are much concerned with the discovery, extent, and nature of differences among people. The existence of these differences is the reason
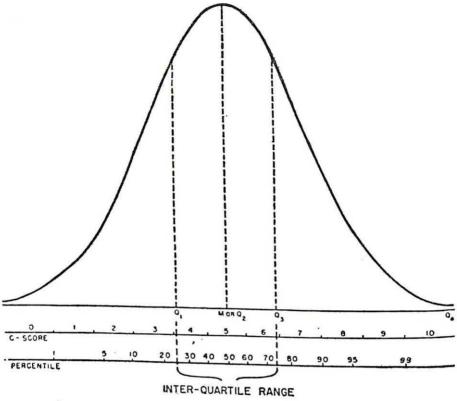
FIGURE 3

A NORMAL CURVE OF DISTRIBUTION WITH DESIGNATIONS OF PERCENTILES, QUARTILES, AND C-SCORES

Source: Reprinted by permission of Prentice-Hall, Inc., from *Psychology of personnel in business and industry,* p. 136, by Roger M. Bellows, copyright 1949 by Prentice-Hall, Inc.

for the interview. These variations make it possible to match applicants with jobs, and to place and replace, classify and reclassify workers after they have been employed.

The importance of recognizing individual differences was first clearly demonstrated in 1796 by astronomers who corrected their equations for differences in observations of the times for the passage of stellar bodies.

Later research workers sought to quantify differences between individuals. Sir Francis Galton in London set up an anthropometric laboratory in 1882 in order to measure a number of physical dimensions of thousands of individuals. During his analysis of the data he developed statistical procedures such as the now widely used correlation techniques and rating scale methods for studying differences between people. He is largely responsible for the quantitative techniques available to that area of psychology which deals with differences between people—sometimes known as differential psychology.

FIGURE **4**

DIFFERENCES BETWEEN HORSES AT THE END OF A RACE

Source: Redrawn from the Detroit *Free Press,* July 29, 1951.

Generally speaking, any collection of people can be described according to how much of a particular characteristic they have. A few of them will be found to have a great deal of the characteristic, the majority will have some average amount of it, and a few of them will noticeably lack it. This distribution of people according to a scale of amount of characteristic is called by statisticians a "normal curve of distribution" or a bell-shaped curve. A picture of such a theoretical curve is shown in Figure 3. Applying this principle to the speed of race horses, we can see from Figure 4 that one horse is outstanding as finishing first, another is runner-up, several are grouped together, and two horses trail at the end. These animals arrange themselves very much in what might be called roughly a normal distribution.

Another example of the measurable differences among people appears in Figure 5, which shows the results of a study of the reading ability of

one hundred foremen in a manufacturing plant.[4] A short test of speed of reading was given to the group, and their performance on this test was re-
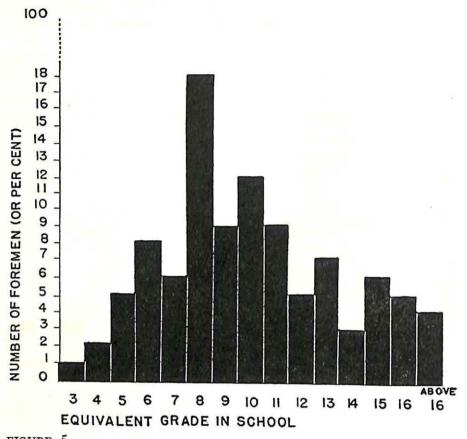
FIGURE 5

DIFFERENCES IN READING ABILITY OF 100 FOREMEN

Source: Reprinted by permission of Prentice-Hall, Inc., from *Psychology of personnel in business and industry*, p. 350, by Roger M. Bellows, copyright 1949 by Prentice-Hall, Inc.

ported in terms of school-grade equivalents. There were extreme differences among this group: the fastest reader read almost twenty times as much material in the seven minutes as the slowest reader. The figure shows

[4] Roger M. Bellows, *Psychology of personnel in business and industry* (New York: Prentice-Hall, Inc., 1949), pp. 349–350.

that 40 per cent of the group read no better than eighth-grade students if as well.

Likewise in Figure 6 differences are shown in the number of errors made on the job by ninety-eight coding clerks. Many clerks made three
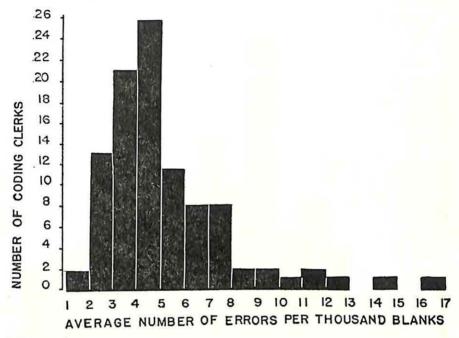
FIGURE 6

DIFFERENCES IN AVERAGE NUMBER OF ERRORS MADE BY 98 CODING CLERKS

Source: William H. Stead, Carroll L. Shartle, and Associates, *Occupational counseling techniques* (New York: American Book Company, 1940), p. 84.

or four errors per thousand blanks but one person made an average of sixteen errors per thousand.

In considering individual differences, we are interested in how such differences between people arise. One way of considering the causes of individual differences is to discuss the roles of heredity and environment as determiners of differences between people. The Greek philosopher Plato wrote:

In the first place, no two persons are born exactly alike, but each differs from each in natural endowments, one being suited for one occupation and another for another. . . . Now is it not of the greatest moment that the work of the war should be done well? Then, apparently, it will belong to us to choose out, if we can, that special order of natural endowments which qualifies the possessors for the guardianship of the State.[5]

Plato believed that men were "born that way." He was evidently a strong advocate of the theory that heredity plays an important part in differences among people. Many sociologists as well as Watsonian behaviorists claim that heredity has little influence upon our ultimate achievement, or upon our intelligence, or upon our job abilities. These people claim that we arrived at our present degree of proficiency and our potential performance largely by learning. They maintain that we were not "born that way." Geneticists, on the other hand, are strongly of the opposite point of view. They would agree with Plato that heredity, or "nature," was the determiner of personal, social, and intellectual patterns.

If we had completely accepted an "innate faculty" notion of the make-up of an individual, training and education would have been given a secondary role. The eclectic point of view, on the other hand, has given impetus to research and has been a forward step in the formulation of working principles which are compatible in both the fields of psychology and of training and education.

In order for interviewers to interpret the potential of an applicant, it is desirable that they have an appreciation of the complexities of the heredity-environment controversy, as well as of the limitations of scientifically validated predictors. In the interview we would be able to use as predictors facts which concern the heredity of the applicant, if such items of information proved to be valid. Hereditary characteristics of the applicant are difficult to observe and measure, and have not thus far proven very useful as interview items. Biographical information pertaining to environment, such as socioeconomic status, past background of experience, learning,

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[5] Plato, *The republic*, J. L. Davis and D. J. Vaughan transl. (New York: Burt, 1866), Bk. II, p. 60.

occupational experience, and the like, has been shown to be somewhat more useful in prediction.

Meager as our experience has been in this field it is of considerable significance and importance to personnel technology. It should be borne in mind that whereas we do not have as much by way of facts, methods, and results in the interview area as most people would like to believe, this area is not without a heritage of knowledge and information. On the basis of this we can set up a working point of view. This point of view will be discussed in the next chapter.

Summary

Some interviewers today still cling to false techniques in selecting people. The pseudo sciences, such as phrenology, graphology, and physiognomy, have not yielded the statistical evidence necessary for these techniques to be accepted as valid by scientists. The best way to safeguard against their use is by training interviewers to recognize fallacies, and to depend upon more objective types of evidence available to them in the selection process. Part of this training is acquisition of background knowledge of psychology as it applies to the interview.

It is not feasible, at the present time, to try to "type" people according to traits of personality, or by constellations of such traits. It is hard to get agreement on the definition of the word "trait." Judgments on personal traits may be more wrong than right.

The enlightened interviewer will become aware of the nature and extent of individual differences, and the utility of items of biographical information, as a more useful approach to matching men and jobs.

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CLINICAL AND RESEARCH APPROACHES
TO THE INTERVIEW

There are two main ways to improve the interview. One is by sharpening the clinical judgment of the interviewer. The other is by research on interview techniques, and use of the techniques developed by research. While the two need not be separate in practice, we may best consider them separately for clarity of discussion. The purpose of the personnel selection interview is the same whether the approach is clinical or research: to select or place the right person in the right job.

The Clinical Approach

The concept and method of the clinical approach to the interview was perhaps first clearly set forth and used at the University of Pennsylvania in the 1890's.[1] Here it was, and is, used largely for vocational and educational guidance, and for adjustment counseling.

The clinically trained interviewer does not ordinarily go beyond the study of one individual at a time. One of the earmarks of the clinical way is the consideration of the individual without reference to group statistics.[2]

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[1] C. M. Louttit, The nature of clinical psychology, *Psychological Bulletin, 36:* 1939, 361–389.

[2] Psychologists are working on statistical ways of handling clinical data, however. A recent symposium was devoted to statistics for the clinician. See *Journal of Clinical Psychology, 6:* 1950, 1–76.

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The individual is unique and judgments about him must be based on observations of him only. The clinically oriented interviewer says that the rules of validation do not apply, that his way is "face-valid."

The clinical approach is not basically different from the layman's usual one. Most lay interviewers have the idea that they are good, that they have a faculty, albeit mystic, of sizing up men. "Skill," "experience," "intuition" are alleged to make the difference between a good interviewer and a poor one. Skill is some quality that the interviewer either is supposed to have developed through experience or is supposed to have been born with. This false confidence is a part of the general psychological make-up of all of us, to a greater or lesser degree. We think we can evaluate people very well by looking at them or by talking to them.

The clinical interviewer trained in clinical method is also not loath to claim that he has unusual "intuition." When asked how he has come by his intuitive faculty, he simply says he has it—that he is able to get information "out of the blue"—but he cannot give any evidence for his assertion, nor does he believe evidence is necessary.

There seems to be great differences among interviewers in their ability to judge the characteristics and potential job performance of applicants. Most interviewers can improve forecasting efficiency by learning some of the common errors in judging and limitations of the interview technique. Improvement of the interview through the clinical approach means that the interviewer will learn how to minimize his own influence on the outcomes of the interview. His manner, his voice and language, and especially his background of bias and prejudice all contaminate the outcome of an interview. The chapters in this book are aimed at the self-training of interviewers, working toward the improvement of the judgments drawn from the interview.

The Research Approach

In actual practice both clinical and research approaches are frequently combined: the interviewer makes all the use he can of items of data pertaining to an applicant that have been verified by research methods; realizing this is only a small part of what he needs, he falls back upon the clinical

approach to fill in the gaps. In the research approach, individual case study will not suffice. Emphasis is on the objective comparison of the applicant with statistical populations and on the use of research methodology.

"Research" is an interesting word. It is used by people with various interests and backgrounds, each giving it a different meaning. Writers of advertising copy use it as a loaded word, implying dependability or scientific precision. Librarians use the word to indicate an exhaustive hunt for hard-to-find articles and books about a special area of knowledge. Insurance salesmen use the word to refer to searching out the legal aspects of payment for disability or death in special instances.

The term "pure research" is used in cases where there is no intention to apply the findings of the research to some immediate problem; instead, the pure scientist explores an unknown in the hope that he will uncover truth, simply for truth's sake. The pure psychologist is interested in describing and explaining behavior. He is not interested in any immediate practical application of his description and explanation. Another use of the term "research" in science is in connection with applied research. There *is* an immediate, practical reason for applying research findings. Any applied research concerns itself with improving a situation. Application of electronic theory to television receivers for our homes is an example.

Improvement of the interview process may entail *action research*. The improvement is effected in a highly systematic manner. This means that the interviewer will participate with research specialists to achieve improvement.[3] Improvement goes forward by objective investigation, by thorough-going experimentation under appropriately controlled conditions, and by adequate statistical interpretation of data. If research may be considered in terms of phases, we may describe about eleven phases or steps in conducting interview research procedure.

Steps in Conducting Interview Research

The first step is to define and delimit the problem to be solved. Only a narrow segment of a larger problem should be worked on at a time. The

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[3] Roger M. Bellows, Action research in the human factor, *Advanced Management*, *18:* 1953, 20–23.

second step is to find out what has been done in the past on this problem. This involves surveying the literature (so-called library research) or studying reports by previous investigators before setting up the design of a particular investigation.

The third step, in either pure or applied research, is to set up a plan or design for the investigation. In applied research this design for the study is set up in terms of the practical situation in which the researcher finds himself. He must decide how many and what kind of subjects he will need, as well as where and how to collect his data. He plans in advance the manner in which the data are to be collected, and, tentatively, what statistical procedures are to be used in the analysis. The design often includes a statement of several hypotheses or assumptions; for example, scores on a certain psychological test may predict which applicants will be successful. Hypotheses may be proven true or false as the result of the collection, statistical analysis, and interpretation of appropriate data. Details of the design of the investigation are recorded clearly and completely in such a way as to enable other research workers to repeat the investigation at a later time for the purpose of verifying the results.

The fourth step in the procedure is the collection of data: in personnel research, usually criterion data, such as supervisors' ratings, and predictor data, such as psychological test scores or interview data, are appropriate. Data are collected in the actual situation in which the subjects (employees) perform their work.

The fifth step is the analysis of the data. In our case this step includes the use of psychological statistics to find out the degree of association or correlation between various arrays of data, or the significance of differences between sets of data. Occasionally somewhat more elaborate statistical techniques are used. Statistical procedures are helpful because these computations reduce or "boil down" large masses of data and simplify interpretation of the results. Also, the results of research can then be presented more effectively to potential users of the products.

A sixth step in the research process is interpretation of the data: this often includes consultation with specialists on the meaning of the analyzed data. Each of the hypotheses made in the design is verified or disproven. On the basis of his interpretation of the results of the analysis, the personnel

research worker determines whether he has sufficient evidence to accept or reject the hypotheses he formed at the beginning of the study.

The seventh step is the formulation of several recommendations based upon the research findings. The recommendations carry with them a statement of just how the techniques developed and evaluated will most likely work; what increases in efficiency might be expected from them; how they, in use, may result in economy and effectiveness of personnel operations.

The eighth step is the preparation of a list of new, related research problems that have been brought to light by the earlier phases of the research. This may be a valuable reference list for another investigator when starting research on related problems.

The ninth step in the research process is preparation of a research report —the presentation of results. It may be either nontechnical or technical or both. One may be prepared and submitted for management and the other for technical and professional workers. One other characteristic, besides clarity and coherence, is required of the report: it must state what was done in such a way that another investigator can repeat the investigation at a later time to verify the results obtained. Concerning the quality of reports published in the professional journals, Jones has published a survey of reports written about employee selection.[4] She points out that the reports written up about a selection project are not uniformly adequate either in experimental design or in reporting the project. After examination of more than 2100 references covering the period 1906 to 1948, she found that only 427 (20 per cent) contained sufficient information to permit evaluation of the study by an outside observer. Many of these studies were inadequate to permit the drawing of conclusions as to the efficacy of the selection procedures employed. Only eight reports met all the required points.

The tenth and a most important step is sometimes neglected by research workers unless they are part of the organization that uses the research product. This step is installing the product. When recommending that a new technique be used, the personnel research worker will find it desirable to manualize the procedures, as a kind of training for in-service personnel in their use. The research technician (he may be an interviewer) will

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[4] Margaret Hubbard Jones, The adequacy of employee selection reports, *Journal of Applied Psychology,* 34: 1950, 219–224.

participate in the early phases of the use of new techniques to whatever extent is necessary to ensure optimum utilization of the tools that have been developed.

The eleventh and last step is also of considerable importance. The personnel research worker is, of course, interested in verifying how good his tool is in actual use. This step, sometimes called cross validity or follow-up validity, entails repeating the investigation at a later time to the extent that a check may be made on the continuing usefulness of the devices that have been installed. It may be considered as a check on dependability and will be more fully treated a few pages further on in this chapter. If conditions have changed—changes in applicant population, job changes, or changes in interviewers themselves—this step will show whether or not the changes have affected the use of the tool. Corrections or adjustments can then be made in the personnel selection tool so that it may continue to be used with maximum profit to all concerned.

The extreme research approach is exemplified by the classic work of Hull[5] and by Hovland and Wonderlic.[6] Hull's general scheme was simply to quantify all data, to develop a criterion, to determine the validity of each trial predictor item, and to combine predictors for maximum forecasting efficiency. Reliability and validity are all-important concepts in the research approach. Hovland and Wonderlic's *Diagnostic Interviewer's Guide* is discussed in the chapter on improving judgments during the interview by use of systematic ratings (Chapter 9). It is a specific example of Hull's approach in the interview area.

Basic Concepts in the Research Approach

Generally speaking, research designs for study of the interview are of two kinds, one for checking on the reliability of the tool and one for determining the predictive power, or validity, of the tool, depending upon the statement of the problem. The study which has to do with a check on the "reliability" of the interview is the kind most frequently made in the past.

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[5] Clark Hull, *Aptitude testing* (Yonkers-on-Hudson, N.Y.: World Book Company, 1928, 535 pp.).

[6] Carl I. Hovland and E. F. Wonderlic, Prediction of industrial success from a standardized interview, *Journal of Applied Psychology, 23:* 1939, 537–546.

Checks on the validity of interview procedures are more difficult, largely because of the problems involved in getting adequate criteria. Two other concepts we shall want to discuss in this section are the dependability of a tool, or its continued usefulness over a period of time, and its utility in terms of the expenditure in time and money needed to complete the project and to use the results.

RELIABILITY

Reliability is defined as the degree of internal consistency of the interview data collected. Crissy describes three fundamental aspects of the question of interview reliability:

1. intra-rater consistency, *i.e.*, the agreement of the interviewer with himself insofar as his appraisals of interviewees are concerned;
2. inter-rater consistency, *i.e.*, the agreement among interviewers insofar as their respective judgments of interviewees are concerned;
3. the consistency of behavior elicited in the interview, *i.e.*, the extent to which the interviewee behaves and responds in the same way to similar stimuli in successive interviews.[7]

When two or more interviewers rate applicants independently and agree closely, the data are said to have high reliability. If they cannot or do not agree closely, the data are unreliable. Designs to determine reliability of interviews are relatively simple to set up. It is only necessary to have about two, three, or four interviewers or teams of interviewers interview an adequate sample of applicants independently. It is obvious that they must not compare notes or exchange information concerning their judgments about the applicant, at least before they make their ratings. Their ratings are then converted into a numerical code, and a statistical analysis is made to determine how closely their ratings of particular applicants agree.

Another method for evaluating reliability is by repeat interviewing. The same interviewer may interview the same group of subjects on two different occasions, spaced at intervals of a month, two months, or six months apart. His judgments from the first interview are compared with his

[7] W. J. E. Crissy, The employment interview—research areas, methods, and results, *Personnel Psychology, 5:* 1952, 74.

judgments from the second. If he makes about the same rating both times, the data are said to have high reliability. It is clear that he may, however, remember his ratings or the judgments he made on former occasions, and this fact makes the index of internal consistency somewhat doubtful if this design is used. Furthermore, the interviewees may be expected to change during the interim period. The better design of the two is usually use of independent interviewers for checking on the reliability or internal consistency of interview judgments.[8]

One of the more comprehensive studies on the reliability of the interview may be cited as an example.[9] The subjects used for investigation were 399 candidates for reserve commissions, and 137 SPAR officer candidates. Two psychologists and one psychiatrist conducted the interviews, independently of each other. The interviewer, after each interview, wrote a brief report on his findings and impressions and then assigned an over-all coded rating for the candidate. It was concluded that the basis used by the interviewers for judging the candidates was complex and involved evaluation of several characteristics. The results of the study were reported by the investigators in terms of statistical indexes of agreement between interviewers (coefficients of correlation). The correlation coefficients between the ratings made by the independent interviewers based on all the data were 0.83 for candidates for reserve commissions and 0.85 for SPAR officer candidates.[10] The correlation coefficients were high enough that we may say there was a considerable amount of agreement between the ratings given by the independent interviewers to the candidates.

VALIDITY

In a complete evaluative study both reliability and validity of the data are analyzed. Of the two, validity is, of course, the more important. Determining the validity of the employment interview means finding out whether

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[8] Other suggestive research designs may be found in Crissy, *loc. cit.*

[9] Sidney H. Newman, Joseph M. Bobbitt, and Dale C. Cameron, The reliability of the interview method in an officer candidate evaluation program, *The American Psychologist, 1:* 1946, 103–109.

[10] Correlation is a statistical technique for determining the amount of relationship between variables. The coefficient of correlation (also called r) is a numerical index ranging from -1.00 (negative or inverse relation) to $+1.00$ (positive relation).

or not use of the interview actually helps in the selection of good workers—what is the relationship between predictions of interviewers about applicants and their success when they are placed on the job? Validity is defined as a measure of the degree to which a device does what it is supposed to do and is usually expressed in terms of a correlation coefficient (see footnote 10 on page 32, above).

Investigations concerned with the validity of the interview are somewhat more difficult to design than the ones aimed to measure mere reliability. Furthermore, the collection of the data is more involved and requires a longer period of time. This is perhaps the reason that fewer studies have been made on validity. It would appear at first glance that it would be fairly simple to set up a validity study. However, it is far from simple in actual practice. The main consideration has to do with the establishment of what is technically known as the criterion.[11] The criterion is defined as a measure of success of an employee on his job. It is necessary to establish some sort of criterion before validity of an interview may be evaluated. The criterion is the yardstick used to distinguish the good from the fair or poor workers. A number of examples come to mind: number of units produced per hour, the number of days absent, or other objective measures of the quality of the worker. Sometimes the supervisor merely rates his employees and his rating is used as a criterion.

From the standpoint of design, it is clear that a criterion must be developed. This means that a sample of workers must be placed and followed up on the job. Sometimes this follow-up requires only several weeks; in other situations several years are necessary. A general rule is that the follow-up should take as long as it is necessary for the workers who comprise the experimental sample to reach normal production on the job. The criterion part of the study must then normally extend through the training period of the worker and as much longer as is necessary to gather reliable and realistic criterion data.

When the poor workers can be distinguished from the good workers by means of their performance on the job, a check can be made to compare

[11] Roger M. Bellows, Procedures for evaluating vocational criteria. *Journal of Applied Psychology, 25:* 1941, 499–513; Robert J. Wherry, Criteria and validity, Chapter 27 in Douglas H. Fryer and Edwin R. Henry, *Handbook of applied psychology* (New York: Rinehart & Company, Inc., 1950), pp. 170–177; John G. Jenkins, Validity for what? *Journal of Consulting Psychology, 10,* 1946; 93–98.

how they actually turned out on the job with how the employment interviewer predicted they would turn out. If his predictions were good, the interview is said to have validity for selection purposes. Validity is, then, the "acid test" of the usefulness of the interview.

In the case of the interview, research enables making a recommendation as to which kind of interview method should be used, or whether the interview as a selection tool is indicated for use at all, in a given situation.

DEPENDABILITY

It would appear that checking the validity of the interview would be all that is necessary in order to check the value of an interview for selection purposes. However, it has been found that whereas a particular interview technique may have *had* high validity in experimental situations,[12] when further follow-up is made this validity may fall off. In other words, what is technically known as cross validity may not be found to exist (see step eleven of the research process above). This is dependability: How stable are the items you use in your interview procedure over a long period of time?

The dependability or stability of the interview procedure used must be checked for several reasons. First, the population of applicants may change. Even if an interview procedure is found to be valid for one sample of applicants, this is no sure sign that it will be continuously valid, since the characteristics of the population may change significantly. This is particularly noticeable in periods of unusual employment, as, for example, during a national emergency when most male applicants are in service and the applicant population consists largely of women. Another example is the general gradual increase in level of education of the total employment force.

The second reason is that the job situation itself may change. For example, during World War II "bombardiers" were selected and trained who were good at visual bombing. Today the same kind of bomb sight is no longer used. Rather, flying is at high altitude, usually at night, and radar bombing is used. The job title is still the same, "bombardier," but a difference

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12 In the related selection area of psychological testing, a test which has shown high validity in one situation may have very low or no validity in another. Ghiselli, for example, found this to be the case in clerical occupations.—E. E. Ghiselli, The validity of commonly employed occupational tests, *University of California Publications in Psychology, 5:* 1949, 253–288.

has taken place in job duties. Obviously techniques used for selection of the old-style bombardier might be of no use in the selection of the new-style bombardier, whom we might better call an "electronics technician." The psychological tools once used to predict success in this situation are most likely no longer valid. Different psychological characteristics of workers may be required a year or two after the study than was the case during the original validity study. If the job becomes simpler, if it becomes more complex, if additional manipulative or computational or verbal skills are required, then it would be expected that the old interview procedures might no longer work.

Third, it would be expected that the interviewers would be most careful during any period of checking on the validity of their interviews. They would be putting out their best efforts, would be cautious, would tend to be objective, would tend to observe more carefully, and would record their impressions with more accuracy. Interviewing is often thought of as a rather monotonous task by interviewers. After a man has interviewed for a period of a year or two for approximately 2,000 hours a year, we would expect a decrease in his interviewing efficiency, in the accuracy and care with which he performs his work. This is a research problem of no small importance—the optimal length of experience for interviewers before they reach a point of slackened endeavor. For these three reasons it is desirable to make continuous checks on the validity of interviews.

UTILITY

It goes without saying that an interviewing device may be too cumbersome to be profitable—one for which the paper work may be too great. The expenditure of time in interviewing may exceed the profit derived as a result of its use. Cost analyses may be made in terms of outcomes of devices of known validity and these outcomes compared with the cost of the development of the tool and accomplishment of the interviews.

Summary

Research, as applied to the interview, involves the development and evaluation of improved interview procedures. The research approach is dif-

ferent from the clinical approach. The clinical approach to interviewing is seen to be characterized by

emphasis on the individual;
dependence upon some mystic power such as "intuition";
lack of quantification of data; and
lack of need for statistical validation or checks on its value.

The research approach, on the other hand, is characterized by

statistical checks on different methods by means of follow-ups;
statistical validation and checks on dependability and stability; and
choice and use of the most valid and useful method.

The reliability of the interview is an index which tells the degree of internal consistency between two or more interviewers interviewing independently. Validity is a measure of the external consistency of interview data—how well the interview actually does predict success of people on the job. It is the "acid test" of the interview. To determine validity there must be a satisfactory sample of people who have been interviewed, employed, and followed up over a period of time until criterion data can be gathered concerning their success. Then these data pertaining to the degree of efficiency on the job may be correlated with or compared with the original interviewer's ratings.

The index of validity of the interview is itself insufficient. It is necessary to conduct long-range studies of the dependability and stability of interview procedures.

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JOB INFORMATION IN INTERVIEWING

Introduction

It is important for the employment interviewer to be familiar with company jobs in order to answer the kinds of questions the applicant is likely to ask him. The applicant wants to know what he is supposed to do in his work, how he is supposed to do it, why he does it. Even more important, the employment interviewer himself is concerned with the minimum hiring requirements of the job. He encounters a variety of aptitudes, skills, and physical characteristics in his applicants. Some applicants have minor physical handicaps, some have unusual skills. The interviewer is not able to hire and place the men adequately if he does not know what skills are needed in the jobs of his company. These and other kinds of information can be supplied by job analysis.

The concept of job analysis is simple. Analysis of jobs usually yields at least three kinds of information: the nature of every job is defined, the tasks of the job are described, and the requirements which the job demands from the worker for successful performance are indicated. The War Manpower Commission, in working out occupational analysis and manning tables, defined job analysis as "the process of determining, by observation and study, and reporting pertinent information relating to the nature of the specific job. It is the determination of the tasks which comprise the job and of the skills, knowledge, abilities, and responsibilities required of the worker

for successful performance and which differentiate the job from all others." [1]

Job analysis is not new in personnel programs in industry. In 1930, of 109 firms surveyed, 39 per cent at that time were doing job analysis. By 1947, this figure had reached 66 per cent of 325 companies who replied.[2] The kinds of firms surveyed ranged from the very large, heavy manufacturing industries to very small businesses.

In this chapter we shall be concerned with how the employment interviewer can do job analysis and use its products, as well as sources and use of the wealth of material already available to him on job information. We shall show several forms which have been used in other companies and agencies for job analysis. They are suggestive for companies desiring to develop forms for a job analysis program.

A Few Job Analysis Definitions

The word "job," as it is popularly used, means something different from our usage of the term. Many people are inclined to call their work a "job"—referring to whatever they do in a company. This usage of the word "job" is similar to the way we prefer to use the word "position." Each employee in the company has a position. There are as many positions in a company as there are employees on the payroll. A number of positions which involve similar duties, tasks, and skills may be known by the same job title. For example, suppose in a dime store there are twenty-five salespersons. We would say, for clarity of definition, that there are twenty-five sales positions. However, because the tasks done by each person are similar, all twenty-five positions represent only one job title, that of salesperson for a dime store. In the whole dime store there may be only twenty or thirty different job titles, such as Salesperson, Cashier, Janitor, Store Manager, Display Manager, Bookkeeper, Soda Fountain Clerk, and perhaps Receiving Room Clerk. If we were to compare the jobs in a number of different

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[1] War Manpower Commission, Division of Occupational Analysis and Manning Tables, *Training and reference manual for job analysis* (Washington, D.C.: United States Government Printing Office, 1944), p. 1.

[2] Walter Dill Scott, Robert C. Clothier, and William R. Spriegel, *Personnel management* (4th ed.); New York: McGraw-Hill Book Company, Inc., 1949, Appendix A, p. 588.

dime stores, we would find that there are several jobs which are similar from one establishment to another. For example, the salesperson in one store has similar job duties, skills, and responsibilities to those of the salesperson in another store. We would call this grouping an "occupation."

There are some other terms which are of interest to the employment interviewer. One of them is the "job specification." A job specification is a statement of the minimum hiring requirements or standards which an applicant must meet for a particular job. These minimum hiring standards are usually physical and mental standards. Another term is the "job description." This is a brief statement of the duties or tasks which a worker does in performing his daily work. A third term is "job relationships." They are statements showing the relationships between the next job lower and the next job above the particular one being analyzed, as well as jobs on about the same skill level. Usually these job relationships are indicated by "promotion from" and "promotion to" on the job analysis form.

The Job Analysis Schedule

In a *Training and Reference Manual for Job Analysis*,[3] several job analysis schedules are reproduced which have been completely filled out. Also, a detailed discussion is given, clarifying the definitions for each of the items on the job analysis schedule. The type of job analysis schedule which it contains (see Figure 7) would probably be filled out by a job analyst hired by the company for a short period of time or by the interviewer guided by a job analyst or consultant.

Some companies prefer to have the employees themselves fill out descriptions of what they do. They return their job descriptions to a central job analysis office in the company for editing so that all will be uniform. In the Pittsburgh Plate Glass Company, for example, the employees fill out their own position descriptions, but a form has also been prepared for a job analyst to jot down other observations he feels are necessary to supplement the employee's write-up. The form for this data sheet is shown in Figure 8.

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[3] War Manpower Commission, Division of Occupational Analysis and Manning Tables, *Training and reference manual for job analysis* (Washington, D.C.: United States Government Printing Office, 1944, 104 pp.).

JOB ANALYSIS SCHEDULE

JOB TITLE _____ DATE _____

ALTERNATE JOB TITLE _____

NUMBER OF EMPLOYEES: NORMALLY _____ MALE _____ FEMALE _____

PEAK _____ MALE _____ FEMALE _____

LOCATION OF JOB _____ HOURS OF WORK _____

JOB ANALYST _____ NO. OF SHEETS _____

APPROVED BY _____ NO. OF SHEETS _____

JOB SUMMARY _____

_____

_____

I. Work Performed	% of Time	Importance of Duty

FIGURE 7
JOB ANALYSIS SCHEDULE (PART 1)

II. MINIMUM HIRING REQUIREMENTS
   A. *Experience Required:*

   B. *Experience Desirable but Not Necessary:*

   C. *Training Data (Minimum Training Time):*
      1) On the job training

      2) Technical or vocational training

      3) Formal education

   D. *Relation to Other Jobs:*
      1) Promotion from —

      2) Promotion to —

      3) Job combination —

   E. *Supervision:*

III. PERFORMANCE REQUIREMENTS
   A. *Responsibilities:*

   B. *Job Knowledge:*

   C. *Mental Application:*

   D. *Dexterity and Accuracy:*

FIGURE 7
PART 2

Physical Activities	*Working Conditions*
_____ 1 Walking _____ 28 _____	_____ 51 Inside
_____ 2 Jumping _____ 29 _____	_____ 52 Outside
_____ 3 Running _____ 30 _____	_____ 53 Hot
_____ 4 Balancing	_____ 54 Cold
_____ 5 Climbing	_____ 55 Sudden Temperature Changes
_____ 6 Crawling	_____ 56 Humid
_____ 7 Standing	_____ 57 Dry
_____ 8 Turning	_____ 58 Wet
_____ 9 Stooping	_____ 59 Dusty
_____ 10 Crouching	_____ 60 Dirty
_____ 11 Kneeling	_____ 61 Odors
_____ 12 Sitting	_____ 62 Noisy
_____ 13 Reaching	_____ 63 Adequate Lighting
_____ 14 Lifting	_____ 64 Adequate Ventilation
_____ 15 Carrying	_____ 65 Vibration
_____ 16 Throwing	_____ 66 Mechanical Hazards
_____ 17 Pushing	_____ 67 Moving Objects
_____ 18 Pulling	_____ 68 Cramped Quarters
_____ 19 Handling	_____ 69 High Places
_____ 20 Fingering	_____ 70 Exposure to Burns
_____ 21 Feeling	_____ 71 Electrical Hazards
_____ 22 Talking	_____ 72 Explosives
_____ 23 Hearing	_____ 73 Radiant Energy
_____ 24 Seeing	_____ 74 Toxic Conditions
_____ 25 Color Vision	_____ 75 Working with Others
_____ 26 Depth Perception	_____ 76 Working around Others
_____ 27 Working Speed	_____ 77 Working Alone

FIGURE 7
PART 3

OCCUPATIONAL CHARACTERISTICS CHECK LIST

JOB TITLE_____   SCHEDULE NO._____

Indicate the amount of each characteristic required of the worker in order to do the job satisfactorily by putting an "X" in the appropriate column. Following are the definitions of each level:

O—The characteristic is not required for satisfactory performance of the job.

C—A medium to very low degree of the characteristic is required in some element or elements of the job.

B—Above-average amount of the characteristic is required.

A—A very high degree of the characteristic is required in some element of the job.

When in doubt between A and B, rate B; when in doubt between B and C, rate B; when in doubt between C and O, rate C. If some characteristic not on the list is required, write it in, rate it, and define it briefly at the bottom of the form.

AMOUNT				CHARACTERISTICS REQUIRED	AMOUNT				CHARACTERISTICS REQUIRED
O	C	B	A		O	C	B	A	
				1. Work rapidly for long periods.					26. Arithmetic computation.
				2. Strength of hands.					27. Intelligence.
				3. Strength of arms.					28. Adaptability.
				4. Strength of back.					29. Ability to make decisions.
				5. Strength of legs.					30. Ability to plan.
				6. Dexterity of fingers.					31. Initiative.
				7. Dexterity of hands and arms.					32. Understanding mechanical devices.
				8. Dexterity of foot & leg.					33. Attention to many items.
				9. Eye-hand coordination.					34. Oral expression.
				10. Foot-hand-eye coordination.					35. Skill in written expression.
				11. Coordination of both hands.					36. Tact in dealing with people.
				12. Estimate size of objects.					37. Memory for names and persons.
				13. Estimate quantity of objects.					38. Personal appearance.
				14. Perceive form of objects.					39. Concentration amidst distractions.
				15. Estimate speed of moving objects.					40. Emotional stability.
				16. Keenness of vision.					41. Work under hazardous conditions.
				17. Keenness of hearing.					42. Estimate quality of objects.
				18. Sense of smell.					43. Unpleasant physical conditions.
				19. Sense of taste.					44. Color discrimination.
				20. Touch discrimination.					45. Ability to meet and deal with people.
				21. Muscular discrimination.					46. Height.
				22. Memory for details (things).					47. Weight.
				23. Memory for ideas (abstract).					48. —
				24. Memory for oral directions.					49. —
				25. Memory for written directions.					50. —

PITTSBURGH PLATE GLASS COMPANY . . . *Analyst's Data Sheet*

JOB TITLE:			DEPARTMENT:		
JOB No.	J. D. No.	No. EMPLOYED:	ANALYST:		DATE:

MINIMUM HIRING REQUIREMENTS

TRAINING AND EXPERIENCE

A. Education

1. What minimum formal education (or its equivalent) should be required of a candidate for this position?
   Elementary: 0 1 2 3 4 5 6 7 8   High School: 1 2 3 4   College: 1 2 3 4 5 6 7

   Other (Vocational School; Business College): 1 2 3 4 5 6 _____

2. What special courses or specific knowledge is essential to performance?

B. Preliminary Experience

1. What minimum previous experience should be required of an average, mentally and physically suited individual to meet the minimum starting requirements of this job?

   a. Kind of experience (job titles and/or explanations)   b. Minimum Time

C. Learning Period

1. Given the above background of education and preparatory experience, what additional new factors peculiar to this job would an employee starting in this position have to learn?

2. Under intensive supervision, what is the shortest estimated time it would take an average individual with the above background to learn these new factors and to attain minimum acceptable proficiency in performing them?

OTHER EMPLOYMENT REQUISITES

A. Physical

1. Describe any special or unusual physical requirements that are necessary to perform the job adequately (such as height, weight, strength, keen eyesight, etc.) and explain why they are needed:

B. Basic Qualifications

1. Describe any special hiring requirements of this job (such as the need for specific skills, knowledges, abilities, and aptitudes, and whether the employee must be licensed or bonded, must furnish tools, or meet any other employment requisites) and explain why they are required:

FIGURE 8

JOB ANALYST'S DATA SHEET FOR THE PITTSBURGH PLATE GLASS COMPANY

Source: Eileen Ahern, *Handbook of personnel forms and records* (New York: American Management Association, 1949), p. 132.

One of the features of the job analysis form is a rating list called the *Occupational Characteristics Check List*. This form provides space for a list of abilities or skills needed on jobs which can be rated in terms of four degrees of the amount of skill needed to do the particular job being analyzed. In an early book Viteles described a job psychograph, which is a forerunner of this later method. The job psychograph was that part of the job specification which outlined the requirements of the job in terms of special abilities. In Viteles's job psychograph, which was the first one, historically, to be developed, a list of thirty-two standard terms was used, each specifically defined. His list contained energy, rate of discharge, endurance, control, coordination a, coordination b, initiative, concentration, distribution of attention, persistence, alertness, and so on. Typical of the definitions is the one for control:

> . . . by this is meant the ability involved in the execution and direction of large body movements. Walking, for example, involves control to a marked degree. In the job of lifting pig iron onto a railroad car, control would be rated high. In contrast, in comptometer operation it would be rated as a relatively negligible trait, inasmuch as here the more important requirement is the rapid execution of fine finger movements while large body movements are rarely involved in maintaining efficiency.[4]

In addition to providing a standard list of terms and definitions of them, the job psychograph also enabled an observer to rate the importance or value of each ability on the job. A five-point scale was used for this purpose. Definitions of the values: (1) negligible; (2) barely significant; (3) significant; (4) of great importance; (5) of utmost importance. These ratings were recorded on a form graphically in order to show what abilities were judged essential to success and also their general relation to each other. Connecting lines drawn from one to another provided a profile, which was different for each of several occupations. Viteles used the job psychograph in combination with other data on duties and conditions of a job for a com-

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[4] Morris S. Viteles, *Industrial psychology* (New York: W. W. Norton & Company, Inc., 1932), p. 153. See also Morris S. Viteles, Job specifications and diagnostic tests of job competency designed for the auditing division of a street railway company, *Psychological Clinic, 14:* 1922–1923, 104.

plete job specification. He pointed out that one of the features of the job psychograph was the possibility of grouping jobs with similar patterns of abilities so as to simplify hiring and transfer procedures.

A later approach to stating qualifications for work was the one developed by Trabue, called Occupational Ability Patterns.[5] Trabue was associated with the University of Minnesota Employment Stabilization Research Institute. One of the tasks of this institute in 1931 was that of classifying occupationally a group of about four thousand unemployed persons whose histories were to be analyzed statistically and studied intensively by the various divisions of the institute.[6] The group at the institute was interested in learning the distinguishing characteristics between those laid off and those kept on as employees during a depression period. They also wanted to know about the occupations themselves—why did certain occupations increase in importance while others disappeared from the work scene?

The institute collected detailed records on each unemployed person, including occupational history and records of physical and psychological examinations. In trying to determine the occupational adjustment of each unemployed individual, the staff soon found it necessary to devise some immediate means of presenting the data for an individual case graphically with maximum accuracy, clarity, completeness, and speed. The Occupational Ability Profile was the graphic method which emerged.

> The ability patterns for some occupations are very much alike, while those for other occupations are decidedly different. It seems probable that there are definite families of occupations, and that one occupation in the family calls for almost exactly the same patterns of ability as many others, although the specific knowledge or skill required in the two occupations may be quite different. Perhaps a reorganization of our entire scheme for classifying occupations might profitably be based upon such tested ability, personality, and interest patterns.[7]

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[5] M. R. Trabue, Occupational ability patterns, *Personnel Journal*, 11: 1933, 344–351.

[6] D. G. Paterson, J. G. Darley, and R. M. Elliott, *Men, women, and jobs* (Minneapolis: University of Minnesota Press, 1936, 145 pp.). This book is a report of the results of the project of the University of Minnesota Employment Stabilization Research Institute.

[7] Trabue, Occupational ability patterns, *loc. cit.*, pp. 350–351.

The experience of the institute members was such that they felt that median profiles could be developed on any recognized occupation and yield a well-established Occupational Abilities Profile which was unique for that occupation and distinct from other occupations.

Applicants who are matched up against a profile which represents an occupational family are matched in terms of their similarity to the average type of employee for that occupational family. It would seem better that workers be selected who are like the best people in that particular job opening, rather than like the average person, so that selection standards tend to be raised over a period of time. The use of the profile for selection purposes has not been shown to be an ideal method; it has, however, been useful in some situations.

The Dictionary of Occupational Titles

The job analysis terminology we have used here is the same as that used throughout the Occupational Research Program of the United States Employment Service.[8] The Occupational Research Program was designed in 1934 to provide public employment office personnel with information about jobs, and with techniques to aid them in determining applicants' aptitudes and other characteristics to facilitate proper counseling, classification, and placement of workers. A major portion of the work in the Occupational Research Program was gathering job descriptions from several thousand different job locations. Occupational research analysts all over the country analyzed jobs and sent them into a central office for editing. The information from which the job definitions were written had been secured from two sources: (1) direct observations or job analyses by the field workers, and (2) a compilation of occupational data secured from such sources as libraries, employers, trade and labor associations, labor organizations, and public employment offices.

When the job definitions were assembled, considerable work was done in arranging and classifying them into a usable form for interviewers and

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[8] Detailed information can be found in Carroll L. Shartle, Occupational information (New York: Prentice-Hall, Inc., 1946), p. 4. The work of this program is now being continued as the Division of Occupational Analysis of the United States Employment Service.

other personnel people. *The Dictionary of Occupational Titles* is one of the products available to anyone from the Superintendent of Documents at the United States Government Printing Office in Washington.[9] The 1949 revision of the *Dictionary* contains definitions of 22,028 jobs, which are known by 40,023 titles. A sample page of the *Dictionary* is shown as Figure 9.

The *Dictionary* revision encompasses two volumes. In Volume I are the definitions of the jobs, the statements of what the worker does, how he does it, why he does it, and usually an indication of the skill involved in doing it.

Volume II has five sections. The first section is the occupational classification structure arranging the jobs according to code numbers. The second section contains an index of the common commodities sold in retail and wholesale trade to assist in classifying persons engaged in the various sales jobs. The third section is a glossary which clarifies technical terms used in the job definitions. Many job definitions include complicated technical processes and involved concepts, thereby making it necessary at times to use technical terminology with which the lay reader may be unfamiliar. The fourth section contains definitions of industrial designations used to show in which industries jobs defined in Volume I are usually found. The industry definitions are followed by lists of job titles contained in the *Dictionary* which are found in these industries. An alphabetical index of these designations makes up the fifth section.

During the war years the *Dictionary* provided the standard job terminology and code numbers which facilitated labor recruitment for war industries throughout the country and aided in the transfer of workers from less essential to essential industries. It also made available uniform job information and furnished the means of classifying the civilian skills of persons entering and leaving the armed forces.

Using the Products of Job Analysis

Job analysis information, to have maximum value, must be kept in some readily available reference system for the employment interviewer to

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[9] United States Employment Service, Division of Occupational Analysis, *Dictionary of occupational titles. I. Definitions of titles* (2d ed., 2 vols., Washington, D.C.: United States Government Printing Office, 1949, 1518 pp.).

use at his desk. One suggested form is a five by eight inch reference card file. The employment interviewer must decide how to arrange and separate the jobs in his company into some classification. A code number system may be useful for this purpose. Several kinds of code numbers might be suggested. One would be to separate the jobs into the department numbers of the company, perhaps using the payroll or job number for separation within the department. A second way would be to use the occupational code number which is described in the *Dictionary of Occupational Titles*. Individual occupations are identified by five-digit or six-digit code numbers. The structure of the classification is such that all occupations are divided into seven major occupational groups, which are again divided into smaller groupings at different levels of detail. The seven major occupational groups are

Professional Occupations
Clerical and Sales Occupations
Service Occupations
Agricultural, Fishery, Forestry, and Kindred Occupations
Skilled Occupations
Semiskilled Occupations
Unskilled Occupations

Some of the value of using this kind of code number is that the employment interviewer would have before him the reference number needed to look up comparative information from the *Dictionary of Occupational Titles*.

The number is also of value in "job family relationships," a term which describes a group of jobs which require common characteristics or skills. As Trabue had predicted in 1931, certain *families of occupations* can be grouped on the basis of the common psychological and physical characteristics required, a fact which the Occupational Research Program recognized, and when the *Dictionary of Occupational Titles* was developed these families

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FIGURE 9 (OPPOSITE)

A SAMPLE PAGE FROM THE DICTIONARY OF OCCUPATIONAL TITLES

Source: United States Employment Service, Division of Occupational Analysis, *Dictionary of occupational titles, I. Definitions of titles* (2d ed.) ; Washington, D.C.: United States Government Printing Office, 1949, p. 725.

Kettle-Tender Helper   725   Kick-Press Operator

KETTLE-TENDER HELPER (textile) *see* DYE-MA-
CHINE-TENDER HELPER.

KETTLE WORKER (soap) 8-53.15. cooker. A LABORER.
Assists SOAP MAKER by manipulating soap-vat stream,
fat, and alkali-admission valves as directed. Occasionally
stirs soap solution with wooden paddle to promote proper
blending of materials within vat.

KETTLING-MACHINE OPERATOR (knit goods) *see*
GARMENT LOOPER.

KEY CLERK (hotel & rest.) 1-07.20. Issues room keys to
BELLMAN or to hotel guests on their arrival, accepts keys
from guests who are going out, hanging them on a rack or
placing them in mail compartments, and gives keys to
guests when they return. Gives mail and telephone or
other messages to guests on request. Frequently supplies
information concerning guests, hotel, and local points of
interest [INFORMATION CLERK]. May sort, mark, and file
incoming mail [MAIL CLERK (clerical)]

KEY-CRIMPING-MACHINE OPERATOR (can. &
preserv.) 8-04.10. key-machine operator. A LABORER.
Attaches can-opening keys to metal containers of preserved
foods by means of an automatic or pedal-operated key-
crimping machine. Feeds cans one at a time into machine.
Presses pedal to actuate crimping mechanism. Removes
cans with keys attached. Loads key magazine at regular
intervals.

KEY CUTTER (any ind.) 7-59.970. key maker; key-
smith; key worker. Cuts keys on a key-duplicating
machine, using finished keys as guides. Places key blank
having same over-all size and grooves as key to be dupli-
cated in one side of machine carriage and places key to be
duplicated in other side. Starts machine which automat-
ically cuts key. Stops machine, removes key, and files off
burr.

KEY FLOORMAN (aircraft mfg.) *see under* STOCK-
CONTROL CLERK

KEYING-IN SEAT MAN (boot & shoe) 6-61.434.
Operates a machine which rubs, smooths, and presses the
edges of the heel seat of the outsole and heel of the shoe
where they are joined to improve the appearance and fit:
Brushes edge of heel seat of outsole and heel with water.
Presses heel seat edge of shoe against mold edge of the
revolving key of the machine, turning the shoe to bring the
entire seat edge in contact with it.

KEY-MACHINE OPERATOR (can. & preserv.) *see*
KEY-CRIMPING-MACHINE OPERATOR.

KEY MAKER (any ind.) *see* KEY CUTTER.

KEYMAN (motor trans.) 1-35.01. Supervises workers
engaged in receiving, storing, and distributing parts and
accessories for repair and maintenance of motortrucks and
trailers, performing duties as described under SUPERVISOR
(clerical).

KEY-PUNCH-DUPLICATOR OPERATOR (clerical)
1-25.62. duplicating-punch-machine operator; electric-
duplicating-key-punch-machine operator; key-punch-ma-
chine operator, automatic. Operates a machine that
makes duplicate copies of punched tabulating cards:
Places cards to be duplicated in machine along with blank
cards. Starts machine which, through a series of mechan-
ically and electrically controlled devices, locates the holes
in the original or master card and automatically punches
duplicate holes in the blank card. Removes punched
cards from machine. May operate a tabulating machine
[TABULATING-MACHINE OPERATOR], a sorting machine
[SORTING-MACHINE OPERATOR], and a verifying machine
[VERIFIER OPERATOR].

KEY PUNCHER (clerical) *see* KEY-PUNCH OPERATOR.

KEY-PUNCH-MACHINE OPERATOR (clerical) *see*
KEY-PUNCH OPERATOR.

KEY-PUNCH-MACHINE OPERATOR, AUTO-
MATIC (clerical) *see* KEY-PUNCH-DUPLICATOR OPERATOR.

KEY-PUNCH OPERATOR (clerical) 1-25.62. card
puncher; card-punch-machine operator; key puncher; key-
punch-machine operator; punch-machine operator; sum-
mary-punch-machine operator. Records accounting and
statistical data on tabulating cards by punching a series of
holes in the cards in a specified sequence, using a punch
machine similar in operation and action to a typewriter:
Places card on base of machine by hand or automatically
by pressing a lever, and positions carriage for perforating
operation. Following written information on records,
punches corresponding numbers or symbols on the
machine keyboard, thereby transcribing the written
information into perforations on the tabulating cards.
May operate a tabulating machine [TABULATING-MACHINE
OPERATOR], a sorting machine [SORTING-MACHINE OPER-
ATOR], and a verifying machine [VERIFIER OPERATOR].

    PRINTING-PUNCH OPERATOR (clerical). Uses
a specially equipped machine that types identifying
data on tabulating card at the same time that the holes
are being punched.

KEY REPAIRMAN (musical inst.) 7-13.365. Repairs
brass-band-instrument keys damaged in manufacture:
Straightens key castings by hammering out dents. Fills
depressions with solder, using gas torch and soldering wire.
Solders broken parts together. Finishes repaired sections
by filing and rubbing with emery cloth.

KEYSEATER (mach. shop) *see* INTERNAL-KEYSEATING-
MACHINE OPERATOR.

KEYSEATER HAND (mach. shop) *see* INTERNAL-KEY-
SEATING-MACHINE OPERATOR.

KEYSEATER OPERATOR (mach. shop) *see* INTERNAL-
KEYSEATING-MACHINE OPERATOR.

KEYSMITH (any ind.) *see* KEY CUTTER.

KEY - SWEATER - MACHINE FEEDER (tinware)
8-93.07. A LABORER. Works as a member of a crew who
solder can opening keys to can lids: Positions can lids on a
form. Lays keys on lids, observing soldering operation as
lids flow through a mechanism that melts the solder and
fuses the keys to the can lids. Packs processed lids into
containers.

KEY-UP MAN (auto. mfg.) *see* VALVE-KEY MAN.

KEY WORKER (any ind.) *see* KEY CUTTER.

KIBBLE FILLER (bit. coal mining) *see under* SHOVEL-
MAN, HAND (any ind.).

KICK-IN ENGINEER (logging) *see under* ENGINEER.

KICKING-MACHINE OPERATOR (leather mfg.) *see*
FULLING-MACHINE OPERATOR.

KICK-PRESS OPERATOR (aircraft mfg.) *see under*
FORMING-PRESS OPERATOR (any ind.).

——(any ind.) I. 6-88.610. foot-press operator. Shapes
and assembles parts of light metal, plastics, or like material,
using a kick press: Installs appropriate die sections on ram
and platform of press, and adjusts stroke of ram. Alines
work on lower die section of press platform, or if platform is
equipped with guide bars, positions work against bars.
Depresses pedal to lower upper die section and form or
assemble parts. Measures work for conformance to speci-
fications, using protractor, radius gage, steel scale, or other
measuring instrument. Performs a variety of machine
set-ups and adjustments as contrasted to KICK-PRESS
OPERATOR II who performs repetitive operations of a single
type.

——(any ind.) II. 9-13.28. foot-press operator; nibbing-
machine operator. Shapes and joins light metal, plastics

were worked into a coding scheme so that when a worker had to be transferred from one job to another job, he could be placed in the occupational family that fitted his characteristics. Because of the uniqueness of a characteristic to that particular family of jobs, a man who can be placed in one job can be placed in another job in the same job family.

Once the jobs have been sorted into code numbers and the codes identified for the jobs, the employment interviewer would then have the job descriptions copied on five by eight inch cards. This description of the job duties is the raw material for him to use during the employment interview. Another item which he would want on this same reference card is the job specification. What are the minimum hiring requirements for this particular job? Does the job require color vision? Does it require that the man be able to lift fifty-five pounds? Does it mean that he would have to stand on his feet? Does he work inside or out?

Several references are suggested which would be of immediate help to the interviewer in understanding job analysis products and utilizing them in his work. Probably the best single source for getting help on job analysis is the War Manpower Commission's *Training and Reference Manual for Job Analysis.*[10] The War Manpower Commission has also prepared a *Guide for Analyzing Jobs—Analyst's Work Book,* a small pocket pamphlet which sum-

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[10] Other references for a bookshelf of information for doing job analysis are Roger M. Bellows, *Psychology of personnel in business and industry* (Rev. ed.); New York: Prentice-Hall, Inc., 1954, 186–208; M. J. Jucius, H. H. Maynard, and C. L. Shartle, *Job analysis for retail stores (Research Monograph No. 37;* Columbus, Ohio: Bureau of Business Research, The Ohio State University, 1945, 65 pp.); N. L. Martucci, A case history of joint management-labor job evaluation program, *Personnel* (American Management Association), *23:* 1946, 98–105; Jay L. Otis and Richard H. Leukart, *Job evaluation: a basis for sound wage administration* (New York: Prentice-Hall, Inc., 1948), pp. 177–291; Carroll L. Shartle, *Occupational information* (New York: Prentice-Hall, Inc., 1952, 425 pp.); William H. Stead and W. Earl Masincup, *The Occupational Research Program of the U.S. Employment Service* (Chicago: Public Administration Service, 1942, 219 pp.); William H. Stead, Carroll L. Shartle, and Associates, *Occupational counseling techniques* (New York: American Book Company, 1940, 273 pp.); M. S. Viteles and K. R. Smith, *Job analysis procedure* (OSRD, 1943, Publication Board No. 4030; Washington D.C.: United States Department of Commerce, 1946, 24 pp.); War Manpower Commission, Division of Occupational Analysis and Manning Tables, *Guide for analyzing jobs—analyst's work book* (Washington, D.C.: United States Government Printing Office, 1944, unpaged); and War Manpower Commission, Division of Occupational Analysis and Manning Tables, *Information manual on industrial job evaluation systems* (Washington, D.C.: United States Government Printing Office, 1943, 28 pp.).

The reader is also referred to professional journals such as the American Management

marizes much of the same kind of training information for job analysts. This small notebook can be carried around and used by the analyst as he is learning to do a job analysis.

Other Management Uses of Job Analysis Products

As we have indicated, the employment interviewer is particularly interested in having available to him a reference file of the job duties required in the several jobs in his company. He is interested in knowing, too, what the minimum hiring requirements will be for any of these particular job titles. Management is interested in other products of the job analysis program, and they are many.[11] Included are the functions of placement, recruitment, organization, communications, selection research, testing, motion and time study, personnel cost analysis, vocational counseling, wage administration, safety administration, job evaluation, biomechanics or work simplification, merit rating, selection, and training.

Job analysis information is widely used in developing job evaluation systems. Job evaluation is an area of personnel management concerned with establishing equitable pay rate ranges so that each employee has an opportunity to earn a salary in line with the skills and demands required by the job itself. Interviewers participate in the use of the products of job evaluation.

Another use of job analysis information is in connection with merit evaluation of employees, or merit rating. Once the performance requirements of the jobs are known, then the employees' merit in accomplishing these various tasks can be evaluated. Job evaluation and merit evaluation are tied in together in an effective wage program.

Job analysis is also related to training. Job descriptions tell the training director of the various duties people are required to perform. He is thereby in a much better position to arrange programs which will accomplish effectively the purpose of helping employees to learn the tasks.

Association's magazine *Personnel*, which frequently reviews job evaluation and job analysis articles. *Personnel Psychology* also reports studies of this sort, as does the *Journal of Applied Psychology.*

[11] Roger M. Bellows, *Psychology of personnel in business and industry* (Rev. ed.); New York: Prentice-Hall, Inc., 1954, p. 190 ff.

If management executives or interviewers plan to do job analysis, they should consider the company's over-all personnel program to determine if there are other uses for the products of job analysis before undertaking the program. For example, it can be seen that if the program were undertaken only for and by the employment interviewer, he would be interested in gathering job descriptions and job specifications. However, he would be by-passing, perhaps, information which the safety director would like to know about hazards of the jobs. He might also by-pass many of the details important for skill inventories. He might by-pass the determination of job relationships which are basic to the construction of an organization chart within a company. And he might not obtain sufficient information for job evaluation purposes.

Management would profit from a planning session with several key personnel in the organization to discuss other potential values of the products before job analysis is begun.

Summary

Job analysis is a process whereby the employment interviewer may be provided (or provide himself) with a written statement describing the jobs and stating the minimum hiring specifications for all jobs. About two thirds of the companies surveyed in 1947 were using some form of job analysis in their plants.

Job analysis terminology and technique were developed by the Occupational Research Program of the United States Employment Service. From this program emerged a wealth of job information, and the *Dictionary of Occupational Titles,* which can be used by the interviewer to obtain brief definitions of occupations unfamiliar to him. This *Dictionary* was prepared after years of intensive job analysis in many locations across the country. A sample job analysis form is reproduced for adaptation by companies wishing to do their own job analyses.

It is suggested that the employment interviewer convert the information on the job analysis schedule to some abbreviated form for use at his desk. A card file, classified by the code numbers for occupations used in the *Dictionary,* is recommended.

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CONSTRUCTION OF APPLICATION BLANKS

Introduction

Nearly every company uses some form of an application blank. Of 325 firms participating in a survey in 1947, 99.5 per cent used an application blank.[1] These application blanks range from the very brief three by five inch preliminary interview card to an elaborate folder containing hundreds of questions about the applicant's personal and work history. In this chapter a general discussion of problems involved in the development of application blanks will be given with a view to the improvement of the use of application blanks by interviewers in specific employment situations.

Selection of Items for the Application Blank

In view of the variety of job duties in a company, it might seem at first that a different application form is necessary for each job title. This is, of course, possible and in fact is used in some companies, particularly one type for office and clerical applicants, one for salesmen, supervisory, or technical applicants, and another for production or hourly-paid workers.

In Figure 10 part of a form is shown which is used for the selection

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[1] Walter D. Scott, Robert C. Clothier, and William R. Spriegel, *Personnel management* (4th ed.; New York: McGraw-Hill Book Company, Inc., 1949), Appendix A, p. 574. A series of valuable surveys reported by these authors shows that the use of the application blank has increased from 89 per cent in 1930 to 99 per cent in 1940 and to 99.5 per cent in 1947.

(L) Other training such as vocational, business, technical, commercial, correspondence, extension, etc.	Subject	Dates Att.		Completed	
		From	To	Yes	No

(M.1)Subjects liked best in school? 1._____ 2. _____
3._____ Disliked? 1. _____ 2. _____
　(2)Did you work while attending high school? Yes☐　No☐　College? Yes☐　No ☐
　(3)Nature of employment? _____

(N) Special skills and experience

Estimate your ability in each of the following:	Check One			
	None	Novice	Skilled	Expert
(a) Job Analysis — — — — — — — — — — — —				
(b) Counseling and Interviewing — — — — — — — — — —				
(c) Test:				
1. Administration and Interpretation — — — —				
2. Construction — — — — — — — — — — — —				
(d) Filing (alphabetically and numerically) — — — —				
(e) Drafting and Layout — — — — — — — — — — —				
(f) Motion and Time Analysis — — — — — — — — —				
(g) Attitude, Morale and Opinion Surveys:				
1. Interviewing — — — — — — — — — — — —				
2. Form construction — — — — — — — — — —				
3. Analysis and interpretation — — — — — — —				
(h) Library:				
1. Preparation of bibliography — — — — — —				
2. Cataloging — — — — — — — — — — — —				
(i) Technical Writing and Editing:				
1. Publications — — — — — — — — — — — —				
2. Layout and typography — — — — — — — —				
(j) Calculators:				
1. Monroe — — — — — — — — — — — — —				
2. Friden — — — — — — — — — — — — — —				
3. Marchant — — — — — — — — — — — — —				
4. Others (specify) _____				
(k) I.B.M.				
1. Sorter — — — — — — — — — — — — — —				
2. Key Punch — — — — — — — — — — — —				
3. Verifier — — — — — — — — — — — — —				
4. Tabulator — — — — — — — — — — — — —				
5. Others (specify)_____				
(l) Mimeograph — — — — — — — — — — — —				
(m) Recording Machines:				
1. Dictaphone — — — — — — — — — — —				
2. Soundscriber — — — — — — — — — — —				
3. Wire Recorder — — — — — — — — — —				
4. Tape Recorder — — — — — — — — — —				
5. Others (specify)_____				

FIGURE 10

PART OF AN APPLICATION FORM USED FOR THE SELECTION OF
PERSONNEL RESEARCH TECHNICIANS

of personnel research technicians. In one section of this form space is provided for the applicant to estimate his ability and experience in several special skill areas.

To circumvent the problem of a separate form for each set of job duties, a general form may be prepared for all jobs. Wood has suggested the use of a template that is superimposed on the application form to shield out all but the pertinent information for the particular job being considered.[2] Use of such a template presupposes that study has been made of items on the application form which relate to specific jobs.

In the preparation of application blanks, items are selected in several ways.[3] One way is just to include the items that seem logical and appropriate to the person preparing the application form. Another way of deciding what items to include is to look over application blanks used by other companies and choose appropriate items.

In preparing the *Handbook of personnel forms and records* for the American Management Association, Ahern suggested a number of questions which might be asked to see whether the items under consideration are suitable and necessary for the application form.[4] The guide list is presented as Figure 11.

Several of the questions pertain to the usability of any specific item: Is the information necessary to identify the applicant? Will the information be used? How? Is the information needed for selection at all? Is the application form the proper place to ask for the information? Does it ask for information duplicated elsewhere? Other questions are concerned with the item's relation to selection: Is it based on analysis of the job for which the applicant is to be considered? Does it help to decide whether the candi-

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[2] Wendell F. Wood, A new method for reading the employment questionnaire, *Journal of Applied Psychology, 31:* 1947, 9–17, and Reading the employment questionnaire, *Personnel* (American Management Association), *24:* 1947, 123–126.

[3] Interviewers who are interested in developing new forms or revising old ones may find useful information in these references in addition to the two handbooks (National Industrial Conference Board and American Management Association) described in this section: Beatrice Gaines, Forms control—for modern business efficiency, *Modern Management, 8:* 1948, 7–9, and Techniques of forms control, *Modern Management, 9:* 1949, 15–18. A recent book which contains many sample forms is George D. Halsey's *Selecting and inducting employees* (New York: Harper & Brothers, 1951, 361 pp.).

[4] Eileen Ahern, *Handbook of personnel forms and records* (Research Report No. 16; New York: American Management Association, 1949), pp. 17 ff.

QUESTION	YES	NO
1. Is the item necessary for identifying the applicant?		
2. Is it necessary for screening out those who are ineligible under the company's basic hiring policies? Specifically, what policy does it pertain to?		
3. Does it help to decide whether the candidate is qualified?		
4. Is it based on analysis of the job or jobs for which the applicant will be selected?		
5. Has it been pretested on the company's employees and found to correlate with success?		
6. Will the information be used? How?		
7. Is the application form the proper place for it?		
8. To what extent will answers duplicate information to be obtained in another step in the selection procedure—for example, through interviews, tests or medical examinations?		
9. Is the information needed for selection at all, or should it be obtained at induction, or even later?		
10. Is it probable that applicants' replies will be reliable?		
11. Does the question violate any applicable federal or state legislation?		

FIGURE 11

GUIDE LIST FOR EVALUATING ITEMS FOR APPLICATION FORMS

Source: Adapted from Eileen Ahern, *Handbook of personnel forms and records* (New York: American Management Association, 1949), p. 17.

date is qualified? Has it been pretested on the company's employees and found to correlate with success? Is it probable that the applicants' replies will be reliable?

Another question asks, Does the question violate any applicable federal or state legislation? Some states, namely New York, New Jersey, Connecticut, Massachusetts, Wisconsin, and Indiana, have enacted antidiscrimination and fair employment practices acts which preclude use of certain items.[5] These states do not permit questions to appear on application blanks

[5] National Industrial Conference Board, *Personnel forms and records* (*Studies in Personnel Policy No. 87*; New York: National Industrial Conference Board, Inc., 1948),

which request information about race, creed, or religion of the applicant. Request for a photograph is sometimes considered as discriminatory against race.

A recommendation carried throughout this book is that items be selected on the basis of their relationship to prediction of success of applicants in their history with the company. This is the fifth question on Ahern's guide list in Figure 11; Has [the item] been pretested on the company's employees and found to correlate with success? This basis for selection of items is the more objective approach, and enables the utilization of only items which have been found to discriminate between good and poor workers. It is called the *horizontal per cent method* of item analysis and is described in detail in the next section. Certain nontest trial predictors, as application blank items are called, may be found to be related to later success on the job. Items such as age, sex, marital status, and number of dependents, can be used as trial predictors of success in much the same way that psychological and trade test scores are used. To differentiate the two, we shall usually call items from the application blank either personal data items or nontest trial predictors, as opposed to test scores, which are called trial test predictors.

How to Analyze the Items on an Application Blank—The Horizontal Percent Method [6]

Item analysis of application blanks is a simple statistical technique which can be used by interviewers to determine what nontest items of data are related to success on the job. These nontest trial predictors are validated in a way similar to that used in the validation of psychological tests. Some items may be found to have more relationship to success than others; if so,

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pp. 4–10. Some employers may not be aware of what laws apply in their state concerning discrimination. The New York State Commission against Discrimination has served as the central clearing house for information. New York was the first to enact this legislation. The commission publishes a "Compilation of Laws against Discrimination," 127 pages and appendix. Also, its annual report for 1948 contains rulings on preemployment inquiries and bona fide occupational qualifications. Both publications are available from the New York State Commission against Discrimination, 270 Broadway, New York, N.Y.

[6] This method is discussed in William H. Stead, Carroll L. Shartle, and Associates, *Occupational counseling techniques* (New York: American Book Company, 1940), pp. 256–257.

they are given more weight. The weighting is done by assigning a score to each of the variables according to the amount of relationship they bear to success on the job.

The first step in the analysis is to pull from the personnel files the application blanks for a group of good workers (as many as possible, say fifty) and those for a group of poor workers, perhaps ones who have been discharged (about fifty). These people should all have been working at the same kind of jobs. In order to identify the good workers and the poor workers, a number of criteria may be examined. If the people have been working on a production job, perhaps the number of units produced per hour may be a suitable criterion—the high producers would form the "good" group and the low producers the "poor" group. Absentee records may be used, or tardiness records, or reject and scrap reports. If none of these or similar objective criteria is applicable, merit ratings by the supervisors may be the best criterion for the assignment of the men to the "good" and the "poor" groups.

The next step is the preparation of a work sheet similar to the one in Figure 12 for recording the data from the application blanks. In the figure only two sample items, age and number of dependents, have been analyzed in order to illustrate the procedure. It is, however, worth while to analyze as many items as possible. Many of the items mentioned on other pages of this chapter are amenable to analysis, such as age, marital status, number of dependents, education, academic standing in graduating class, previous work experience, supervisory experience, sales record, membership in professional and honorary societies, and so on. In the next chapter and in Chapter 9 we shall cite items actually used in several companies as non-test trial predictors.

Only general suggestions can be given concerning the number of categories to use for any particular variable. Two or three are desirable, five or six may be appropriate for certain items. In our hypothetical example in Figure 12, we have used only two categories for age, 24 years and under and 25 and over. We could have used many more, for example, 20 and under, 21 to 25, 26 to 30, 31 to 35, 36 to 40, 41 and over. How many are used depends upon the situation.

The characteristics of the two groups can now be tabulated on the

PERSONAL DATA ITEM	CATEGORIES	GOOD WORKERS	POOR WORKERS	TOTAL NUMBER OF WORKERS	% GOOD WORKERS	WEIGHT
Age	25 and over	ﬀﬀﬀ ﬀﬀﬀ ﬀﬀﬀ /// 19	ﬀﬀﬀ 5	24	19/24 = 79.1	79
	24 and under	ﬀﬀﬀ // 7	ﬀﬀﬀ ﬀﬀﬀ ﬀﬀﬀ / 16	23	7/23 = 30.4	30

PERSONAL DATA ITEM	CATEGORIES	GOOD WORKERS	POOR WORKERS	TOTAL NUMBER OF WORKERS	% GOOD WORKERS	WEIGHT
Number of dependents	None	/// 3	ﬀﬀﬀ ﬀﬀﬀ ﬀﬀﬀ // 17	20	3/20 = 15	15
	One	ﬀﬀﬀ /// 8	// 2	10	8/10 = 80	80
	Two or more	ﬀﬀﬀ ﬀﬀﬀ ﬀﬀﬀ 15	// 2	17	15/17 = 88	88

FIGURE 12

WORK SHEET FOR OBTAINING HORIZONTAL PERCENTAGE WEIGHTS FOR PERSONAL DATA ITEMS. (THESE ARE HYPOTHETICAL DATA.)

work sheets in the appropriate categories. In the hypothetical example for analysis of age in Figure 12 we have used twenty-six good workers and twenty-one poor workers. Of the twenty-six good workers, nineteen were 25 or older and seven were 24 or under. Of the twenty-one poor workers, five were 25 and over and sixteen were 24 and under. The total number of workers in the age category 25 and over was nineteen good workers plus five poor workers, or twenty-four altogether. In the age category 24 and under there were seven good workers plus sixteen poor workers, or a total of twenty-three workers in that age bracket.

To determine the numerical weight for each age category, divide the number of *good* workers in that category by the *total* number of workers in that category. In our example for age 25 and over, nineteen good workers divided by the total of twenty-four workers equaled 79.1 per cent. This per cent of good workers is used as the "weight" for the category; hence the weight was 79. Similarly for age 24 and under, seven good workers divided by a total of twenty-three workers equaled 30.4 percent or a weight of 30. From the two weights so derived it is apparent that more weight is attached to an age of 25 or over since a larger proportion of good workers is found in this age group.

The highest weight possible for any particular nontest predictor category is 100. This would occur when there were only good workers in a category and no poor workers and, in that case, the number of good workers would be the same as the total number of workers. The lowest possible score or weight would be zero, which would happen if there were no good workers tabulated within a particular category.

When all categories of the several personal data items have been analyzed to determine their weights, the interviewer has essentially a scoring key to use for deriving a weighted composite score on the application form for an applicant. Using only the two variables from Figure 12 we could compare application forms for a good worker and a poor worker. John Derichev, a good worker, is 28 years old and has three children. His weighted composite score is 79 + 88 or 167. Paul Boesky, a poor worker, is 21 and has no dependents. His weighted composite score is 30 + 15 or 45. The technique for determining what total score he should use as a cut-off

point for hiring is similar to the technique used to determine a critical or cut-off score on psychological tests used for screening purposes.

One firm has prepared its application blanks in a form similar to multiple-choice psychological tests in order to facilitate the analysis and scoring of the items. Thus, instead of asking the applicant to write in a word to describe his marital status the application form would contain several possible choices, the applicant to check the one which applied to him:

> What is your present marital status?
> A ( ) Single
> B ( ) Married, have no children
> C ( ) Married, have one or more children
> D ( ) Widowed
> E ( ) Separated or divorced

or for the number of dependents:

> How many persons, not including yourself, are dependent upon you for all or most of their support?
> A ( ) None
> B ( ) One
> C ( ) Two or three
> D ( ) Four or five
> E ( ) More than five

This format of items might prove to be a workable arrangement which would not only facilitate the analysis and scoring of items but also tend to reduce errors in filling out and reading the form.

Survey of Items Used on Application Blanks

Surveys have shown the large variety of items included on application blanks. The National Industrial Conference Board presents a list of 163 items which may be suggestive.[7] The most frequently asked questions from 50 application forms are shown in Table 2.

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[7] *Personnel forms and records*, cited above, footnote to page 60.

TABLE TWO

MOST FREQUENTLY ASKED QUESTIONS ON
50 APPLICATION FORMS

QUESTION ASKED ON APPLICATION FORM	FREQUENCY
Marital status	50
Date	50
Present address	50
Telephone	50
Signature	48
Length of previous employment	48
Reason for leaving previous jobs	47
Age and date of birth	47
Social security number	45
Experience	43
College attended	42
Grammar school attended	42
High school attended	41
Business or trade school attended	41
Major courses taken	38
Graduated, yes or no	38
Date graduated	38
Work desired	37
Citizenship	37
When graduated	37
Salary or wages on previous jobs	37
Physical defects	35
Person to be notified in case of emergency	34
Three references required	33
Number of children	32

Source: Adapted from information in National Industrial Conference Board, *Personnel forms and records (Studies in Personnel Policy No. 87;* New York: National Industrial Conference Board, 1948), pp. 5–7.

Most companies ask for name, address, telephone number, social security number, sex, age, marital status, and person to notify in case of emergency.

The American Management Association [8] has also made a survey to determine what items are frequently asked on application forms. They hoped, through this survey, to present a check list to serve as a guide for companies who wish to design forms in terms of their own requirements. This AMA report was based, in part, on an analysis of forms that companies have exhibited in the American Management Association's Personnel Workshop, a feature of the AMA Personnel Conferences since 1947. This workshop examination of forms from over a thousand companies led to numerous requests for sample copies that companies could utilize while developing or modifying their own records. In response to this demand, the AMA prepared the *Handbook of personnel forms and records* with the co-operation of the companies whose forms are reproduced.

From this survey of the American Management Association, the check list of items shown below emerged.

EDUCATION AND TRAINING

List below the names and locations of schools, colleges and other educational institutions you have attended; indicate dates of attendance at each, major subjects, and whether you received a diploma or certificate.

List any engineering, electrical, business, correspondence or extension courses. State fully what subjects, when, where, and length of time studied.

What foreign languages do you (a) read, (b) write, (c) speak, and how fluently?

What licenses do you have?

List academic prizes, honors and awards received.

What was your standing in class—i.e., highest, 2nd, 3rd, or 4th quarter?

Did you receive any scholastic honors? If so, what?

What extra-curricular activities did you engage in?

Did you earn any part of your college expenses? What per cent? How?

What percentage of college expenses was earned through employment? Through scholarships?

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[8] Ahern, *op. cit.*, pp. 17 ff.

What jobs did you have between school terms?

If you did not graduate, why did you leave school?

What are your present plans for improving your education?

WORK EXPERIENCE AND APTITUDES

In the space provided below, list your work experience, beginning with your most recent employer.

List experience for last five (or ten) years.

List your last five jobs.

Give all experience in Civil Service or other government jobs (as well as other experience).

Indicate by the appropriate symbols whether you have had training (t) work experience ($\times$) avocational or other practice or knowledge ($+$) in the occupations or skills on the following check lists.

What office appliances can you operate?

Account for any intervals missing from your business record.

Account for all periods of unemployment.

Indicate periods on WPA (Federal Works Progress Administration).

State how you spent your time during any periods of unemployment since leaving school.

Please describe work and experience in detail. For instance, if applying for a job in the machine shop, indicate the approximate number of years of experience on each machine, the size, and type of work performed.

For what position or general type of work are you applying? Give us details of experience you have had which especially fits you for this work. What other experience of general value have you had?

Can you use shop tools such as: Blueprints? Micrometer? Others?

List machines you can operate.

Do you have a complete set of hand tools for your trade?

Have you had any machine shop inspection experience? When?

Have you served an apprenticeship? How long? Trade?

Have you ever supervised the work of others? In what capacity?

Have you done direct supervision? Indirect? Over how many? How long?

If supervisor, responsible to what officer? Much labor trouble?

For what office positions are you qualified? Give years of experience.

What experience have you had in carrying out your own ideas and supervising new procedures?

Have you ever been employed by this company?

Have you ever been employed in the service of the U.S. Government?

Have you ever been employed in the services of any other country?

Are you now employed? Why do you desire to change?

Have you ever been in business for yourself? Where? Nature of business? Number of employees? Why did you discontinue? Have all financial obligations been settled?

Have you ever been discharged, or requested to resign from any position? If so, give particulars.

Give detailed information as to how you secured your last position.

Use space below to supply any additional information.

Is there any additional information you feel we should have when considering you for employment, such as education, experience, machines you can operate, military service training, etc.?

(For Salesmen)

What kind of selling experience have you had? House to house? Retail selling? Route selling? Wholesale selling? Industrial? What field?

Did you sell to wholesaler? Jobber? Retailer? Consumer? What was your best annual volume? Product? What year?

Indicate briefly what responsibilities or experience you have had in any of the following types of work:

> Purchasing
> Receiving, inspection, salvage or traffic
> Stock-keeping or perpetual inventory work
> Manufacturing, planning, scheduling or material control
> Costs
> Orders, sales or statistical work
> Shipping
> Invoicing or accounts receivable
> Collecting
> Accounts payable

Give sales record for each sales activity in previous employment. State products sold, class of trade, territory, sales record by years, gross income for period and net income for period.

What lines have you sold, and for how long?

What type of stores did you call on?

Have you ever sold to institutions, hotels, etc.?

What executive did you usually call on?

In what territories have you worked? Indicate length of time in each.

As a boy did you ever sell anything? If so, what?

(For Technical Applicants)

State briefly why you feel qualified for the position for which you are applying.

Have you any special qualifications, such as ability in insurance, accounting, operation of business machines, etc.? Specify.

Describe any mechanical aptitude that you have.

Give evidence of any inventive ability that you have.

If you have taken out any patents, list the patent numbers and titles.

List any publications in scientific or trade journals.

List any membership in professional and honorary societies.

WORK PREFERENCES

Considering your experience, education and special training, list below in order of preference, the three jobs you consider yourself best qualified for. Why?

Type of work most interested in. Second preference?

What line of work do you most desire to follow, and what special study would be required to fit you for it?

What work do you do best?

In what specialized field are you particularly interested?

Position desired? Number of years' experience in this work? Salary expected?

Have you objections to machines? Objections to piecework?

Which of your previous jobs did you like best? Why?

Will you agree to take occupational tests either before or after employment?

Will you accept shift work?

Will you accept temporary work?

Are you willing to work nights? Sundays?

Location preference?

Are you willing to locate in any part of the U.S.A. we may wish to send you?

Are you willing to travel?

In the space below outline your reasons for selecting this company to become associated with and why you think your qualifications should help you to succeed in this work. What is your ultimate ambition?

In applying for professional and technical positions, describe briefly problems on which you would like to work.

(For Salesmen)

Which type of selling (speciality or commodity) do you prefer? Why?

What is your aim in life?

In what city do you prefer to locate?

AVOCATIONAL AND SOCIAL INTERESTS

How do you usually spend your leisure time?

To what athletic, social, or professional organizations do you belong? Omit organizations of religious, racial or foreign national character.

What are your hobbies or favorite recreations?

In what sports do you participate?

Indicate which, if any, of the following are your outside interests: Golf, baseball, softball, tennis, bowling, table tennis, hiking, dancing, horseback riding, dramatics, photography, orchestra, choral club, instruments played.

Do you like to write? Have you written any stories, poems, essays, or articles outside of your school work? Have any of these been published? Where?

What have you read recently?

What periodicals do you read regularly?

List names of fraternal orders, clubs and organizations you are a member of (except those of religious or racial character).

Did you or do you hold offices in organizations? If so, what?

SERVICE IN U.S. ARMED FORCES

Present draft classification?

Are you in the Military Reserve? Specify.

If you belong or have belonged to any military or naval unit of the U.S.A. give the branch of service, date of enlistment, rank, place of enlistment, date of termination of service and reason for termina-

tion, serial number of enlistment, total months of military service, months in U.S. and number of months overseas.

Have you had specialized assignments or training courses?

What special training did you receive while in military service?

In general, what were your duties while in military service?

Were you disabled? If so, per cent of disability.

State reason for discharge. Date discharged.

Name the campaigns in which you participated.

List any awards, citations, or decorations which you received.

Have you applied for a pension? If so, do you receive a pension?

FAMILY

Give names of parents.

Give names of wife (or husband).

How many children have you living? Are any of them stepchildren or legally adopted? How many children are living at home and dependent on you? Give names. Give names of those living elsewhere but supported by you. List also their birth dates.

Who should be the beneficiary for severance payment in event of your death? Name   Address   Relationship

What are the occupations of your father and brothers?

Does your family approve of your taking up this type of work? [For salesmen]

FINANCIAL DATA

Are you solely dependent upon your employment for your livelihood?

What is the minimum salary required?

Will you be entirely dependent upon your salary for support? If not, what other income do you have?

What is your share in financial support of home?

What per cent of monthly income do you save?

Check any of the following you possess: Checking account, savings account, building and loan, stocks and bonds, real estate (other than own home), thrift certificates, other savings or investments.

Check the type of insurance you carry: Life, accident, health, annuity, hospitalization, none.

Do you carry auto insurance? Property damage? Public liability?

If you own your own home, is it mortgaged?

What is your monthly housing cost?

If renting, give name and address of landlord.

Do you own your own furniture?

Have you any loans? Amount?

Are you in debt? How much? For what reason?

What is your present plan of paying obligations?

Have any suits been instituted or judgments obtained against you for indebtedness?

I am not at present involved in litigation, nor are there any unsatisfied judgments outstanding against me nor have I taken advantage of the Bankruptcy Act or Exemption Law nor pleaded the Statute of Limitations, except as explained below. Give date, court, and complete information.

Have you ever been bonded? Was your bond ever declined or cancelled?

(For Salesmen)

What compensation do you expect and in what form?

What minimum income per month will meet your living expenses and obligations?

How much life insurance do you carry?

How much auto insurance do you carry?

Do you own a car? Is it paid for? Give the make, type, and year.

Do you: Board? Rent? Monthly cost?

Are you able to finance yourself until you receive commissions on shipped orders?

Are you under contract to anyone now? Explain.

HEALTH

Give date of last physical examination. Doctor's name and address?

Have you had any illnesses, injuries or surgical operations within the past three years? Give details: Diagnosis, duration, results, name of attending physician.

Have you ever been under observation or treatment in a hospital, sanitarium or other institution for any medical or surgical condition or conditions? If yes, give full details.

Have you any physical impairments?

Are you in good health to the best of your knowledge?

Have you any physical limitations which should be considered in placing you?

Have you had trouble with arthritis, diabetes, kidneys, high blood pressure, heart, lungs, hernia? Explain.

Have you ever had tuberculosis?

Have you any physical handicaps to sight, hearing, speech, hands, feet? Explain.

List major operations or illnesses since birth, giving date and nature.

List all operations, illnesses and accidents causing disability of four weeks or more. Give nature of disability, date, length of time disabled, completed or partial recovery.

Were you ever injured while working? How many times? Explain.

State other ailments or disabilities.

Can you work for long periods standing up?

Do you wear glasses? If so, state reason.

Has your health in past three years been excellent, good, fair, or poor?

Are you willing to take a physical examination at our expense?

Do you consent to vaccination?

How many days did you lose in your last job because of illness? Explain.

Have you ever collected workmen's compensation insurance benefits? If so, give full details on a separate sheet.

REFERENCES

In listing references we recommend that you name responsible people, who are in a position to vouch for your character, ability and business experience. List at least three, giving name, address, occupation and years known.

Give three character references, excluding relatives and former employers.

Give names of relatives and friends employed by us and indicate relationship.

List personal acquaintances in our employ.

If no previous employment, give three references (not relatives), indicating name, address and business.

Are you now employed? If so, may we inquire of your present employer?

Does your present employer know that you are looking for another position?

Do you object to our communicating with your present or past employers? Present employer will not be consulted without your consent. Who referred you to this company?

HABITS AND CHARACTER

Have you ever been arrested? Give date, place, and offense. (Do not mention traffic violations.)

Have you ever been arrested or convicted of any felony or misdemeanor? Give details.

Do you use alchohol? If so, indicate whether seldom, moderately or frequently.

Do you use drugs?

If you desire a confidential interview with the employment supervisor, please indicate.

MISCELLANEOUS

What would you say is your principal asset?

What would you say is your principal shortcoming?

Describe anything you have ever developed or done which you feel was original or novel.

What one or two accomplishments can you point to with pride that give evidence of your creative mental ability?

Date available for employment?

Have you ever applied to this company before? If so, when and where?

Notice of leaving given last employer?

If employed by this company, do you expect to work elsewhere: if so, where and what hours?

How far is it from our factory to your home?

How do you plan to get back and forth between the factory and home? [9]

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[9] Ahern, *op. cit.*, pp. 23–28. Reprinted by permission.

Summary

Virtually all companies use an application blank as part of a selection procedure. The items used by interviewers on application forms are varied and extend from a very few to hundreds of items. Lists containing items from forms of several companies were presented in this chapter to be used as suggestions for development or revision of application forms. The items that are selected depend upon the function to be served by the form.

An application blank may be developed for each group of similar jobs, or a general form may be prepared with a unique set of scoring weights used when considering different jobs. One method of analysis to determine the weights is called the "horizontal per cent method." The use of this method by interviewers, as described in detail in this chapter, is recommended as one of the simplest ways of accomplishing item analysis for isolating valid items.

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Chapter | **SIX**

THE INTERVIEWING PROCESS

Introduction

The dynamic interchange of information, ideas, opinions, and impressions that takes place between the interviewer and the applicant is the action interview. This is the interviewing process. We have called it, in earlier portions of this book, the interview per se. The employment interview as it is commonly known is characterized by this dynamic personal interchange.

A considerable proportion, perhaps as much as three fourths or more, of the interviewer's time and effort is now spent on the action interview. In some companies interviewers do nothing but interview, i.e., conduct action interviews, all day long with no attention whatever given to other processes closely related and perhaps more valuable in effective personnel selection. Ideally, interviewers would spend perhaps only a fourth of their time conducting action interviews; another fourth of their time in arranging, scheduling, and preparing for these interviews, plus the paper work involved in recording and presenting the results; another fourth would be spent in working with ancillary data and methods such as application blanks and information pertaining to selection other than that connected directly with the action interview; and an additional fourth of their time would be devoted to follow-up evaluative research studies.

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The Job and Characteristics of the Interviewer

Many companies select interviewers by finding applicants for the job who are presumed to "have a liking for people," are personable, talk well, or know the jobs in the company. For the recruiting of interviewers, however, we believe that the announcement of a position opening for an interviewer suggested in Figure 13 is appropriate. Most managements are not yet requiring of their interviewers the abilities specified in Figure 13, but we believe that interviewers should possess them.

HELP WANTED

Interviewer—Personnel Technician Wanted

A position vacancy exists in our firm for an interviewer with special qualifications. Our company employs 800 men and 375 women. We are employing about 700 new personnel each year. The interviewer we select must be able to develop, evaluate, and use methods for selecting new employees who will prove reasonably efficient and remain a long time with our company. Qualifications such as "liking to work with people," "knowing people," or "experience in interviewing" are not wanted. The applicant must have basic knowledge of recruiting, job analysis methods, basic psychological statistical methods, interview and application blank item analysis, criterion development, and follow-up methods. He must know research studies that have been conducted in other companies and in military situations. He will spend only 25 per cent of his time "interviewing" and about 75 per cent of his time in developmental research and in working with others in applying research results.

Apply to
General Manager, Ajax Company
This City
Phone: Adams 0630

FIGURE 13

ADVERTISEMENT FOR THE IDEAL INTERVIEWER

The following occupational specifications were adapted from Shartle's description of the Employment Interviewer.[1]

A. TITLE: EMPLOYMENT INTERVIEWER—PERSONNEL RESEARCH TECHNICIAN

B. ALTERNATE TITLES: None

C. DUTIES: Interviews and classifies applicants in private company or public employment office regarding pertinent facts of occupations; refers applicants to suitable jobs; visits employers (in positions in public employment offices) and determines their requirements and assists them in placement problems; keeps pertinent records; conducts studies, including item analysis, for improvement of the interview and use of biographical information. Detail of above:

1. Interviews and classifies applicants in private company or public employment office regarding pertinent facts of occupations. Interviews applicants to determine if applicants possess proper qualifications, and, in public employment offices, classifies them occupationally according to qualifications. May administer and interpret trade tests and may interpret aptitude test scores.

2. Refers applicants to suitable jobs . . . matches worker qualifications to job requirements and refers applicants to employers; [or] . . . sends applicant to appropriate foreman for final approval.

3. Visits employers (in positions in public employment offices) and by interview with personnel officer or by observing jobs notes requirements and assists company in finding suitable workers from those registered for work. Maintains contacts with employers as to their current needs and their job specifications.

4. Obtains and keeps pertinent records. By interview and by having applicant fill in forms obtains information regarding experience, schooling and other factors. May classify applicant according to *Dictionary of Occupational Titles* occupational code. In private industry may obtain badge photos, fingerprints, and may interpret pay deductions regulations, and explain union membership, retirement and hospitalization. May maintain file of application cards.

[1] Carroll L. Shartle, *Occupational descriptions for positions in psychology* (A report prepared for the Emergency Committee, National Research Council; Columbus, Ohio: 1945), pp. 55–56. Reprinted by permission of Dr. Carroll L. Shartle.

5. Conducts studies, including item analysis, for improvement of the interview and use of biographical information.

D. QUALIFICATIONS:

1. Educational.—This position may require an A.B. degree which includes some work in testing and employment interviewing and perhaps some courses in clinical psychology and statistics. (see 2b below) (Often persons with no psychological training are employed.)

2. Experience.—

a. On-the-job.—Ten days to two weeks of pre-induction training.

b. Prior.—In government service year for year training and experience may be substituted for college education. Experience should include personnel work and a knowledge of oral trade questions and aptitude tests. In industry hiring requirements may vary considerably.

3. Personal.—Must be able to keep forms and records correctly, be able to analyze qualifications well, and be able to meet people and gain their confidence.

E. PROMOTION: Within this department promotions may be from Junior to Senior Interviewer to Psychological Examiner or Employment Counselor and finally to Personnel Director.

F. RELATION TO OTHER POSITIONS: This is an entry occupation for work in either industrial personnel or public employment service and may lead to position in general personnel administration, job analysis, personnel research technician-interviewer, counseling, or psychological testing in these fields.

The Action Interview and Its Ancillary Processes

In Chapter 3 the nature of the clinical approach to the interview was discussed and contrasted with the research approach. It may be truly said that the action interview has not lent itself in the past to the research approach. It is possible, however, to subject the content of the action interview to validation processes in order to evaluate it. Insofar as it is less practicable to evaluate and improve the action interview, this aspect of interviewing has been de-emphasized throughout this book.

It is usual, at the present stage of knowledge and development of the

interview, to view application blank items and related data as ancillary, or secondary aspects of the interviewing process. We, however, prefer to place less emphasis on the action interview and more on the ancillary processes at the present time. It would seem wise to encourage interviewers to spend more of their time during the workday on information and methods pertaining to the ancillary processes of the interview rather than to the action interview itself.

Historically the action interview came first. Then came application blanks, item analysis, formal or informal, of application blank items, and then trade, aptitude, or other psychological tests. The ancillary sources provide information that at one time was thought to serve as a mere aid to the action interview: it was considered an adjunct, an accessory or auxiliary. But now, with systematic and analytical methods for evaluating the data derived from these sources, the action interview appears the less promising of the two. In a discussion of the action interview and its ancillary processes it is well first to clarify the ancillary aspects of the interview.

We define these aspects as including predictors of job success: application blank and other biographical items, preferably item analyzed; and trade tests and other test predictors. Psychological and aptitude tests other than trade tests are not included directly in the treatment in this book inasmuch as this area is far too comprehensive; ample reference sources to these techniques are available in the psychological literature.

What are the characteristics of the action interview which differentiate it from these ancillary procedures? In the action interview the data collected are usually subjective and for the most part not recorded,[2] but the ancillary data are both objective and more readily recordable. Data derived from the action interview are hard to quantify, whereas data collected by the ancillary processes are relatively easy to quantify, to code, and to handle in numerical form. The data collected in the action interview lead to clinical judgments, often based on mere "intuition"; on the other hand, the data collected by the ancillary procedures are nonclinical and are not the result of "intuitive processes." The action interview is subject to interviewer bias, leniency,

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[2] In one study it was found that 9 per cent of the time spent on sixty interviews in eight companies was spent on rehashing "old" information or information that had already been recorded on application blanks. Harry W. Daniels and Jay L. Otis, A method for analyzing employment interviews, *Personnel Psychology, 3:* 1950, 439–440.

stereotyping, and other pitfalls, but the ancillary data are relatively unamenable to such weaknesses. Whereas the action interview yields data that are usually difficult to use in evaluative follow-up studies, the ancillary data lend themselves to follow-up and validation.

It has been pointed out that the action interview itself is amenable to some extent to follow-up validation; however, for several reasons follow-up validation has not been conducted to any great extent in connection with such interview data in the past. The clinical approach has been used in connection with action interview data. On the other hand, the acid test of follow-up validation has been used with ancillary data. In virtually all studies that have been made on the action interview it has been found that the action interview data lack both reliability and validity; the reliability and validity of ancillary data have, however, been found by many studies to be relatively high.[3] The above discussion of the characteristics which differentiate the action interview from its ancillary processes may be summarized in Table 3.

TABLE THREE

DIFFERENTIATING CHARACTERISTICS OF THE ACTION
INTERVIEW AND ANCILLARY PROCEDURES

ACTION INTERVIEW	ANCILLARY PROCEDURES
1. Subjective, nonrecorded data	1. Objective, recorded data
2. Data hard to quantify	2. Data easy to quantify, code, handle in numerical form
3. Clinical judgments	3. Nonclinical
4. Subject to pitfalls, interview bias	4. Not relatively subject to pitfalls
5. Difficult to use in evaluative, follow-up studies	5. Data lend themselves to follow-up and validation study
6. Little or no demonstrated reliability or validity	6. Reliability and validity relatively high

[3] For example, the studies of Hovland and Wonderlic which yielded both reliability and validity, discussed later in Chapter 9, dealt with recordable or "old" data, not intuitive judgments of the interviewer pertaining to so-called personality characteristics of the interviewee. The Diagnostic Interviewer's Guide of Hovland and Wonderlic is considered an ancillary process under our definition, since it deals with "old" or recordable data on the applicant, such as are usually recorded on the application blank.

The action interview may be planned in one of two ways. It may be planned specifically for the purpose of "sizing up" the applicant in terms of such personal characteristics as his bearing and manner, voice, and language. It may be planned to take into account nothing that is recordable or that is available from other more dependable, more reliable and valid sources. This plan is recommended. However, it is estimated that 99 per cent of the interviews now being conducted in industry and business for selection of personnel take into account only incidentally these personal characteristics of the applicant. These characteristics tend to tinge or color the judgments that are made informally concerning the more objective kinds of information available elsewhere, such as the application blank items.

The usual unsystematic interview does not distinguish clearly between judgmental processes that have to do with personal characteristics of the applicant and data that could be collected from more objective sources. In the usual interview situation the interviewer has not given much thought to sources of data on which his judgments are based. Does he use biographical data about the applicant, such as his previous work experience, or does he use impressions as to his appearance, bearing and manner, voice and language which he gathers during the interview? If he uses biographical information which the applicant tells him during the conversation, he is concerned not with the action interview, but with the general selection process. He could get the information from other sources such as records or the application blank. If, however, the interviewer confines himself to the action interview, he observes only the applicant's behavior and makes judgments, as far as the action interview is concerned, based only on this observation.

In actual practice, then, few interviewers distinguish sources or kinds of data. Interviewers tend to meld the two kinds: the biographical data, available from records, with observations not available from records. When they consider the value, or validity, of the interview data, there is often confusion. Sometimes the interview is said to be highly valid; in most such instances what the judgment of validity was based on was biographical data, not observational data. Patterned interview guides tend to aid in distinguishing sources and kinds of data used by the interviewer. These will be discussed in later chapters. It is necessary for the reader to delimit carefully the action interview.

Research has not shown much as to which way is best in the action interview. The ancillary aspects of the interview have, on the other hand, been studied by careful research designs. These have yielded much of value as to effective procedures.

It would be interesting to review what actually does happen during the interview. Fortunately a study has been made by Daniels and Otis which throws some light on this problem. The study was designed and carried out with full knowledge by these research people of the scantiness of available methodology and data on the subject. Their work constitutes a pioneering activity in the action interview; we may expect in the next decade or two to have much more information along the lines of these pilot studies. They studied, by a procedure which enabled recording the responses of both interviewer and interviewee, a total of sixty interviews from eight different companies. Their goal was to find out what took place. Twenty-six different categories were isolated and used to describe the interviews they studied. These categories were

1. The length of time interviewer spoke.
2. Time applicant spoke.
3. Total time of pauses.
4. Total time of interview.
5. Total number of exchanges.
6. Mean time per exchange; i.e., total time of the interview divided by the total number of exchanges.
7. Number of questions asked by the interviewer.
8. Number of "old information" questions; i.e., questions concerning information which was already a matter of record on the application blank.
9. Number of "new information" questions; i.e., questions concerning information which was not on the application blank. Category 8 plus category 9 equals category 7.
10. Number of answers by the applicant.
11. Number of "old information" answers.
12. Number of "new information" answers.
13. Volunteered information statements by the applicant.
14. "New information" volunteered by the applicant.
15. "Old information" volunteered by the applicant.

16. Job information given by the interviewer.
17. Company information given by the interviewer.
18. Suggestions or advice to the applicant.
19. Questions asked by the applicant.
20. Exchanges not concerned directly with the applicant, the job, or the company.
21. Interruptions by the applicant.
22. Interruptions by the interviewer.
23. Applicant's monosyllabic responses; i.e., those responses which did not fit into any of the above categories, and which are commonly used to signify understanding, such as: "Uh-huh," "I see," "Oh," etc.
24. Applicant's responses which were not monosyllabic, but which did not fit into any of the above categories.
25. Interviewer's monosyllabic responses.
26. Interviewer's responses which were not monosyllabic.[4]

An exchange was defined by them as "any utterance on the part of the interviewer followed by an applicant response." Table 4 presents results of their analysis in terms of the mean number of exchanges and the per cent of total exchanges for the various categories listed above (except for the first four) as found for the sample of sixty interviews from eight companies.

Based on the data contained in the table Daniels and Otis were able to describe the characteristics of a hypothetical average interview. Half of the exchanges were actually direct questions by the interviewer. Almost a tenth (9 per cent) of the exchanges were concerned with information already a matter of record; of an average of 22.7 of the questions by the interviewer, 4.9, or about a fourth of them, pertained to "old information." Information that was volunteered by the applicant consumed more than a fourth of the total number of exchanges. It is interesting to note that approximately 15 per cent of the interview was devoted by the interviewer to giving job and company information, a fact which illustrates how important it is that the interviewer have a thorough knowledge of the company and especially its jobs. Job analysis information is of considerable importance to him (see Chapter 4 on job analysis).

The interview analysis also revealed that 12 per cent of the exchanges

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[4] Harry W. Daniels and Jay L. Otis, A method for analyzing employment interviews, *Personnel Psychology*, 3: 1950, 431–432.

TABLE FOUR

MEAN NUMBER OF EXCHANGES AND PERCENTAGE
OF TOTAL EXCHANGES FOR THE VARIOUS
CATEGORIES BASED ON THE ENTIRE SAMPLE

CATEGORY	MEAN	PER CENT
5. Number of exchanges	53.0	100
6. Mean time per exchange (sec.)	12.1	—
7. Interviewer's questions	22.7	43
8. Old information questions	4.9	9
9. New information questions	17.6	33
10. Applicant's answers	22.4	42
11. Old information answers	4.8	9
12. New information answers	17.6	33
13. Applicant's volunteered information	13.8	26
14. Old information volunteered	0.6	1
15. New information volunteered	13.2	25
16. Job information to applicant	3.6	7
17. Company information	4.0	8
18. Suggestions and advice to applicant	6.2	12
19. Applicant's questions	1.4	3
20. Exchanges not concerned (with applicant characteristics)	6.2	12
21. Interruptions by applicant	1.2	—
22. Interruptions by interviewer	1.2	—
23. Applicant's monosyllabic responses	7.8	14
24. Applicant's responses, not monosyllabic	3.3	6
25. Interviewer's monosyllabic responses	14.7	27
26. Interviewer's responses, not monosyllabic	5.9	11

Source: Harry W. Daniels and Jay L. Otis, A method for analyzing employment interviews, *Personnel Psychology, 3:* 1950, 440.

were not concerned in any way with the hiring of the individual: they consisted of small talk, perhaps designed to maintain rapport. Responses on the part of the applicant which indicated to the interviewer that he was understood took up 20 per cent of the applicant's total exchanges; such striving for understanding consumed 38 per cent of the interviewer's exchanges. This

fact is of some importance in pointing to the inference that the two parties to the interview fear the danger of being misunderstood, and each is striving for clarity.

These researchers found several other items of interest. The applicant has some control over the length of the interview. He exercises this control mainly by volunteering information. A relatively high correlation was found to exist between the time used up by the applicant and the amount of information he volunteered.

The work of Daniels and Otis has demonstrated that it is feasible to record the interaction between the interviewer and the applicant without materially affecting the results; classify measurable items in terms of the exchanges between the interviewer and the applicant; and develop a method that will make possible the future comparisons of interviews from one company to another, interviews for different kinds of jobs, and interviews which have a different approach. As a result of methods such as these investigators have devised it should be possible in the future to appraise which approach to the interview—and which of a number of ways of interviewing—will eventually prove to be best. Analyses such as have been made in this pioneer study should make it possible to develop procedures for training interviewers for the action interview.

The Management of the Action Interview

It is not possible in the light of our present heritage of knowledge on the action interview to present a straightforward list of how-to-do-it materials, based on research evidence, for the conduct and management of the action type of interview. A considerable number of articles, however, have been written on "how to interview." [5] The number of such articles and treatises on the art of interviewing runs well above five hundred at the present time. These articles have for the most part been based on armchair argumentation. They are not research reports. Nine items based on the "art"

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[5] The kind of material included is exemplified by the outline of the address given at the 1944 conference of the National Office Management Association by Guy B. Arthur, Jr. Interviewing techniques, *Management Review, 34:* 1945, 169–171. Jerome M. Rosow, Interviewing as a fact-finding technique, *Personnel* (American Management Association), *27:* 1951, 321–327.

of interviewing are discussed below. These are planning, training interviewers, preparing for the interview, establishing and maintaining rapport, managing the time devoted to the interview, recording information, questioning the applicant, using the pause in the interview, and ending the interview.

PLANNING

In planning the interview account must be taken of its purposes, as discussed above. Does the interviewer seek to obtain observations of appearance and behavior, such as those pertaining to bearing and manner, voice and language, and other personal characteristics? Or does he desire in the interview to seek biographical information, some of which has already been obtained from other sources, most of which could be obtained more efficiently from other sources? This, it seems, is the first step in planning: to decide on the purpose or goal of the interview. Having decided this, the interviewer makes an outline of the questions which will achieve the goal, and determines an order or sequence for asking them.

Planning also takes into account the interview environment. It is unnecessary to point out that the applicant would hardly be at his best if the interview is conducted in a room where other people are present. The interview should take place in a suitable, quiet environment free of interruptions. Sufficient time should be allowed for it. The interviewer who has done all the necessary planning for the interview is well informed on job information based on recent job analyses, and he has worked out the techniques with which to check the reliability and validity of the information collected during the interview, as discussed at other places in this book.

TRAINING INTERVIEWERS

It is probable that the trained interviewer tends to produce more effective results than the untrained interviewer. However, the training of interviewers for the action interview is a difficult task because, as pointed out in the section immediately above, little is known concerning the action interview. The training of interviewers should include not only the acquisition of job information and job knowledge, training in company policy, and training in

how to talk and the use of language in questioning; it should also emphasize the importance of the objective attitude, the use of techniques for verification and validation of interview information, and the common pitfalls to which interviewers are subject. These are topics of other chapters.

PREPARING FOR THE INTERVIEW

It is self-evident that the interviewer should prepare himself for the interview. This preparation must also be made in terms of the purpose of the interview. If the selection information to be collected has to do with observations as to the applicant's voice and language, bearing and manner, and related personal characteristics, they call for the use of forms and procedures during or immediately following the interview. These will be designed to yield more objective, systematic judgments on the part of the interviewer. If, on the other hand, the interview is planned to provide an additional check on recorded biographical information of the applicant, then the interviewer should prepare to include forms and procedures on which he would be able to check off, or record, this kind of information.

Often the interviewer plans to use a combination of observation and review of old, recorded information. If so, his preparation should include forms and procedures which will facilitate the systematic collection and recording of observations for making judgments as well as the review of "old information." In the category of preparation might also be included the provisions for the physical environment of the interview as mentioned above.

ESTABLISHING AND MAINTAINING RAPPORT

There has been a great deal of emphasis on rapport in the interview. Almost all of the many popular treatises on the art of interviewing devote some space to this item. It is sufficient here to say that it is naturally desirable for the interviewer to secure rapport not only at the start of the interview but throughout its course. Rapport simply means the establishment of such a relationship between the interviewer and the applicant as will enable a conversation that will yield the desired exchange of information. It is some-

times thought of as a friendly, cordial, cooperative attitude; such an attitude should exist between the two parties to the meeting. It is the bond or connection that the salesman hopes to establish with a prospective customer. Rapport is established and maintained in part simply by handling the applicant in a friendly way. The salesman learns the name of the prospective customer before he meets him, and he also finds out something about the prospective customer so that he can make a little light talk with him before getting down to business.

The work of Daniels and Otis cited above shows that a very considerable amount of time and a number of exchanges were devoted by the interviewer to assuring the applicant that he was being understood. The interviewer often uses monosyllabic words such as "uh-huh" and "yes," to confirm to the applicant that this bond of communication still exists. These insertions are put in by the interviewer at various points during the course of the interview. This is a device used in conversation—and in the interview—to maintain rapport.

MANAGING INTERVIEWING TIME

The management of time by the interviewer is an important aspect of his role. In the first place, the amount of time spent in the interview will depend to some extent upon the nature of the work to be performed by the applicant. If the job is a routine, repetitive manual or routine clerical job, obviously not as much time would be spent as if the vacancy for which applicants are being considered were a junior executive or semimanagerial position.

It is sometimes a problem to establish and maintain rapport with a particularly difficult applicant and yet cut down time spent in irrelevant exchanges to such an extent that a deadline can be met. It was noted that the applicant tends to control the number of exchanges to a large extent by volunteering information, some of which is new. It is part of the interviewer's job to guide the interview in such a way as to achieve its purpose. The achievement of this goal can be facilitated by the use of the appropriate forms and procedures prepared in advance. Such forms are discussed and illustrated in Chapter 9.

RECORDING INFORMATION

It is well known that recall of all that was said in an interview fades rapidly after a session is terminated. Notes or records sufficient for the recall of essential data secured during the interview should be made. Whether such records are made during the interview or immediately after it depends upon the situation. Since note taking during the interview tends to decrease rapport, if rapport is a significant problem the preparation for the interview should provide for recording after rather than during it. In any case, check lists of information, forms and samples of which are given on other pages of this book, will be found useful in this connection.

Ordinarily it is not desirable to use electronic recording devices for recording interview results since the use of such devices is extremely expensive, especially with respect to transcribing the information, much of which is extraneous, to typescript form. Two exceptions to this general rule may be given. The first has to do with interviews of extreme importance, such as managerial or key positions in the company. The other condition in which recording of interviews is desirable is for research purposes. It has been found that the use of such devices for research is entirely feasible. Where action interviews are to be analyzed for research, or where the reliability between interviewers observing and interviewing independently is to be checked, the use of electronic recording equipment is desirable.

QUESTIONING THE APPLICANT

It has been known for several decades that the form of the question is of considerable importance. A question asked in one way may yield certain results; if the same intended question is phrased with slightly different wording the response to it may be strikingly different. This topic is taken up in some detail in the next chapter. The manner used by the interviewer in asking questions is also important. The amount of questioning and the manner used by the interviewer depend upon the goal to be achieved, the plan, and upon the applicant. No two interviews are alike. Rigidly patterned questioning is undesirable. But this is not to say that a check list, or guide to

facilitate covering all of the desired material, cannot be utilized as an aid in questioning.

USING THE PAUSE

Related to questioning is the use of the pause during the interview. In the case of the counseling interview, where a considerable amount of research study has been done, especially in so-called nondirective counseling, it has been found that the period during which neither the interviewer nor the applicant is speaking often yields significant information. If, after the applicant has made an assertion, the interviewer will pause for an interval of time—from ten seconds to sometimes as much as forty seconds or even more—the applicant may reveal information that would not have been elicited if a direct question had been asked. It is by experimenting with the pause that the interviewer finds that he is able to use it to considerable advantage in obtaining information from the applicant.

ENDING THE INTERVIEW

It is hardly necessary to add that the interview should be terminated by the interviewer in such a way as to leave a friendly impression on the part of the applicant. This is sometimes not an easy task, especially if the applicant is rejected, and under some circumstances the applicant must be rejected. The applicant may either be disgruntled toward the interviewer or the firm, or be left with a feeling of confusion and embarrassment. There is no dictum or rule of thumb that can be given the interviewer other than to suggest common courtesy and a cooperative attitude toward the applicant. If the applicant leaves with an unfriendly feeling, the result is poor public relations that may bring on recruiting difficulties in the future. Customer relations, it should be emphasized, are also involved.

It is part of the interviewer's job to do as much as he can for the applicant. Many firms encourage the interviewer to render some vocational or educational guidance to the applicant when it is appropriate to help him in this way. Often the interviewer is in a position to refer the applicant to

another firm or to another job in some other situation which would result in a satisfactory placement as far as the applicant is concerned.

AN ILLUSTRATIVE INTERVIEW

A preliminary interview with Mr. Anderson, applicant for a position as assistant manager of a large, modern auto wash rack, is illustrative. The total number of wash rack employees ranged from nine in slack season to thirty-three on busy days during the rush season. The auto wash rack, which had had an employee turnover rate of almost 2000 per cent during the previous year, was being reorganized. Position descriptions and specifications, including one for assistant manager, had been prepared. The applicant was interviewed by the manager, Mr. Price, who had some knowledge of applicant selection and interviewing procedure. Mr. Price was using a manual for interviewers.[6]

In the following abridged material (the entire interview required an hour and fifty minutes) the symbol *A* refers to applicant, *I* refers to the interviewer. The material in brackets indicates the possible thought processes of *A* and *I;* that in *italics* is the commentary and critique of the exchange by an outside observer.

The interview took place in the private office of the owner of the company, across the street from the auto wash rack.

The applicant had not yet met the interviewer but had talked to him on the telephone the night before upon his arrival in the city. The interviewer was seated and when Mr. Anderson, the applicant, was ushered into the room he arose and shook hands, with a cordial greeting.

I: "Did you have a good trip over here from Kenosha, Mr. Anderson?"
A: "Yes, and a comfortable night, thanks."

> I *discussed the history of the autowash rack and described the present organization and management, doing about 90 per cent of the talking for some 25 minutes. A asked several questions. During this initial period it might have been better for* I *to have allowed A more*

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[6] R. A. Fear, and B. Jordan, *Employee evaluation manual for interviewers* (New York: The Psychological Corporation, 1943, 39 pp.).

time and more participation in the exchanges; 50 per cent of the time should have been adequate; more pauses and suggestive, leading phrases might have prompted more exchanges. After all, the central goal of the interview was to get information, although giving information together with a considerable amount of "selling" was also necessary.

I: [After these preliminary exchanges *I* was favorably impressed by *A*'s appearance, voice, and manner. He cautioned himself against halo, concluded that the same characteristics he was observing would favorably impress the owner as well as the lead-men and the workers the assistant manager was to supervise. He decided to follow the manual in reviewing work history, training, and personal history.]

I: "I've been studying your biographical information you filled in on your application blank. I find your background most interesting and favorable."

Since it was obviously too early in the selection process to make a decision, especially in view of certain information revealed by the application blank, and since the above statement lends itself to interpretation as very favorable, it might have been well for I to have been guarded, at this phase, against the implication that "most interesting and favorable" might have had to A.

I and A: In several exchanges, in which *A* talked some 75 per cent of the time, the last position was described in detail. Each of the positions was discussed, the total time required being about 35 minutes. *I* skillfully used the pause and brief, probing comments to elicit wanted detail.

I (Casually): "I note this lapse of somewhat more than six years, back some years ago in your work history as you put it down on the blank?"

A: "I realize that will require some explanation and I've been waiting for an appropriate place in our conversation to explain it. I was in a state-supported hospital during that period. Both myself and my wife, who is deceased, had trouble with alcohol previous to that period. The six years completely changed me. I have not indulged since. My references will verify that."

I: "I see. How do you feel about the long and irregular hours in this wash rack business as I've described it?"

A: "I have no apprehension there. My present job requires similar long hours."

I and *A:* Exchanges dealing with training and lasting 15 minutes elicited information on the appropriateness of the training background.

[*I* mentally checked off the items in the parts pertaining to previous experience, training, and manner and appearance of the employee evaluation form for interviewers, and was pondering the parts dealing with sociability (teamwork) and emotional stability while *A* was talking. *I* thought *A* had appropriate previous experience with the exception of lack of consistent improvement over a period of years which he explained in terms of the peculiar aspects of being confined in a hospital; *I* was becoming more and more favorably impressed by *A*'s manner and appearance for the position; *I* believed that *A*'s previous work and social experience did show ability along the lines of teamwork since there had been considerable participation in community and group activities.]

Here I did not take into account the influence of the six years of confinement; he perhaps overstressed the experience, indicating sociability prior to confinement.

I and *A:* Exchanges from which *I* hoped to judge emotional stability and maturity required 45 minutes. Here *I* elicited information concerning the 6 parts of the subsections on emotional stability and maturity of the employee evaluation form for interviewers.

I seemed to find it necessary to talk a great deal; he actually talked 75 per cent of the time himself. Also, this part of the interview could have been conducted in a less directed manner; more exchanges might have elicited information that was not forthcoming by the direct approach.

I: "I might indicate to you the details of the remuneration plan we have in mind, as I have for the several other applicants we have been considering."

[*I* gave detail of the plan and potentialities for the future; *I* also indicated when final decision will be made; several questions by *A* and answers by *I* followed.]

I: "Perhaps you would like to go over and see the wash rack in operation. I'll be over by lunch time and I'll see if the owner can have lunch with us if you will be free at noon?"

A: "Yes, I want to see it in operation. I walked by it this morning. I'll wait for you over there."

After the applicant had departed, the interviewer filled in the two sides of the work sheet employee evaluation form for interviewers, making copious notes, summarized by this recommendation to the owner: "This applicant seems well qualified by experience and training, appearance, manner, voice and language, and is judged adequate or above average. Only drawback seems to be the possibility of alcoholism. I believe he should be given further consideration. Two suggestions: Thorough check on all references; aptitude, interest and emotional stability tests."

That afternoon five references were checked by use of telephone reference check list and arrangements were made with a consulting psychologist for administration of a five-hour test battery. All five references (former employers, business, and personal) gave favorable replies to questions pertaining to probable stability; test results were generally favorable. The decision was made to hire the applicant on a thirty-day trial basis. It is concluded that the interview was fairly well handled by the interviewer except as noted above, and that the interviewer realized the limitations of the face-to-face interview and obtained information from additional sources.

A CHECK LIST FOR INTERVIEWERS

A check list of "don'ts" for interviewers follows:

1. Don't start if you haven't time to do a thorough job.
2. Don't start if your attitude is inappropriate or you are emotionally upset.
3. Don't keep an applicant waiting more than a few seconds.
4. Don't stress the applicant's deficiencies or handicaps.
5. Don't ask questions which suggest desired answers.
6. Don't be intolerant.
7. Don't be aggressive.
8. Don't be argumentative.

9. Don't criticize or reprimand the applicant.

10. Don't be unreasonable in your demands of him.

11. Don't take yourself too seriously.

12. Don't be dishonest in any way.

13. Don't forget to smile.

14. Don't fail to try to get all the information you will need from the applicant.

15. Don't waste time unnecessarily once you decide he will not do.

16. Don't treat the applicant in a way that you yourself would not like to be treated.[7]

Summary

The action interview is defined as the dynamic interaction that ordinarily takes place during interviewing in business and industry. It consists of face-to-face give-and-take between the interviewer and the applicant, yielding the exchange of information, ideas, opinions, and impressions. The action interview may be contrasted with ancillary selection processes which have been viewed as secondary sources of information. The secondary sources of information are quite different from the primary action interview source, yet the two are frequently confused by interviewers. Secondary sources are often more objective, more reliable, and more valid, and show more promise for the future than does the action interview itself.

Something of what happens during the interview is known. This knowledge is based on a pioneering study that broke down the interview into its elements. These elements are called exchanges between the interviewer and the applicant. Several items of importance concerned with the management of the action interview are planning, training interviewers, preparing for the interview, establishing and maintaining rapport, managing time for interviewing, recording information, questioning the applicant, and using the pause. Also emphasized is the importance of ending the interview in such a way that the applicant departs with a friendly attitude toward the interviewer and toward the company.

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[7] Adapted from an address at the 1944 conference of the National Office Management Association.—Arthur, Interviewing techniques, *loc. cit.*, p. 171.

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THE LANGUAGE OF INTERVIEWING

Plain Talk

If words used in conversation are too difficult for the other person to under-
stand, the conversation is not accomplishing its intended purpose. We appeal
to the interviewer to use plain talk himself, and to guide the interview in
such a manner that he will get plain talk from the applicant. In a little
pamphlet [1] are included several extreme examples of gobble-de-gook:

> In promulgating your esoteric cogitations, or articulating your super-
> ficial sentimentalities and amicable, philosophical, or psychological
> observations, beware of platitudinous ponderosity.
> Let your erudite communications possess a clarified conciseness, a
> compact, integrated comprehensibleness, coalescent consistency, and a
> concatenated cogency.
> Sedulously avoid all polysyllabic profundity, pompous prolixity,
> psittaceous vacuity, and vaniloquent vapidity.

The author, in referring to these extremes in fancy writing, says that, in
short, "If you have something to say, say it clearly and briefly." [2]

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[1] *Gobble-de-gook or plain talk?* (Dayton, Ohio: Headquarters Air Matériel Com-
mand, Wright-Patterson Air Force Base, 1950), p. iii. This was written by Arthur O.
England, Chief, Personnel and Planning Office, Air Matériel Command. It has been
well received by Air Forces officers. It draws freely upon and gives a credit line to
Rudolf Flesch, *The art of readable writing* (New York: Harper & Brothers, 1949,
237 pp.).

[2] *Ibid.*, p. 2. The idea that an author should disregard how difficult his language is
is engagingly satirized in the *New Yorker*, March 3, 1951, pp. 21–22.

It seems unnecessary to stress the desirability of the use of plain talk on the part of both interviewer and applicant. To be sure, if the interviewer is interviewing the applicant for a highly technical job, it is often desirable to use the technical language of that job. An extension of this procedure used to observe and interpret the readiness and proficiency of the applicant is an oral trade test which derives much value from its use of technical words. For example, "Why are the petcocks on a motor head opened temporarily before starting the motor?" is an actual trade question that was validated for the occupation of Bulldozer Operator along with others by the Occupational Research Program (discussed in Chapter 4). The technical—or semi-technical—answer is "Release compression or prime motor." Except for this specialized use in judging the technical proficiency of the applicant from the language he is familiar with, there seems to be no other excuse for the use of gobble-de-gook.

Many interviewers may influence answers by asking questions which the applicant is not able to understand. A study by Jenkins revealed that to a majority of students the word "peer" meant "superior" (no doubt because of the British nobility or "peerage").[3] Words familiar to personnel men, such as "contingent" and "arbitration," may be misunderstood or misconstrued by the applicant.

Testing the Difficulty of Language

In general it can be said that we tend to pitch our talk "lower," in terms of difficulty level, than our writing. Some interviewers consistently talk over the heads of their applicants. To remedy this fault they should convert their talk to writing in order to consider its difficulty level. This is a simple thing to do with one of the recording devices, either tape, wire, or disc, now on the market. The interviewer merely records one of his interviews, has a typescript prepared of it, and applies the Flesch or some other readability formula to what he has said in the interview. Flesch's formula was designed to combine the average number of words in a sentence with the average number of syllables per hundred words and to yield a quanti-

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[3] Rudolf Flesch, A new readability yardstick, *Journal of Applied Psychology,* *32:* 1948, 221–233.

tative measure of the difficulty of written materials. He has pointed out that we are not understood by any other than a few close friends and relatives if we use difficult sentence structure and polysyllabic words.[4] He says that our close friends and relatives will ask enough questions until they understand what we're trying to say. Not so, however, our public to whom we write articles or make radio speeches—or indeed applicants who come for our jobs. We have to be understood the first time we talk.

Semantics

UNDERSTANDING

In the seventeenth century, John Locke made a plea for plain talk that applies to today's interviewer or to anyone for whom accurate, clear communication is important:

> Vague and insignificant forms of speech, and abuse of language, have so long passed for mysteries of science; and hard and misapplied words with little or no meaning have, by prescription, such a right to be mistaken for deep learning and height of speculation, that it will not be easy to persuade either those who speak or those who hear them, that they are but the covers of ignorance and hindrance of true knowledge.[5]

Other writers have echoed these ideas, and from their thinking semantics, the science of meanings, has developed. We are not concerned here with the large and intricate body of knowledge and interpretations that constitute the stock in trade of the professional semanticist. But the interviewer should be at least aware of the symbolic nature of language.[6] A map is not the territory it represents. It is an abstraction from the territory, but has value in proportion to how well the structure of the map represents the

[4] Rudolf Flesch, *The art of plain talk* (New York: Harper & Brothers, 1946, 210 pp.).
[5] Cited in S. I. Hayakawa, *Language in action* (New York: Harcourt, Brace & Company, Inc., 1941), p. 30.
[6] Two recent articles indicate the interest of personnel workers in semantics: Marvin J. D'Arcangelo, General semantics: a tool for improving the employment interview, *Personnel* (American Management Association), *29*: 1952, 56–61; and Henry C. Lindgren, General semantics: a tool for the counselor, *Occupations, 27*: 1949, 229–233.

structure of the territory. So with words; they are not the objects they represent. The farther afield we go from such relatively simple symbols such as "house" and "dog," the more likely we are to be misunderstood. For example, words like "truth," "liberal," and "democracy" are impossible to relate directly to an external object. Difficulties arise in our use of them because of the diversity of meanings that may attach to them. The territory represented by "liberal" may be vastly different for different people.

The semanticist would say, Flesch notwithstanding, that simplicity of language is not enough by itself for understanding. The concepts involved in language are equally important. We may be more understandable with some people when we use what would be classified as difficult language. This leads us to Korzybski's concept which he terms "consciousness of abstracting." [7] It relates to the necessity of recognizing that all words are abstractions and that we need to be conscious of the differing abstractions which each individual makes from the event as represented in the word. It is highly important in interviewing to attempt to understand the abstracting processes of applicants and to adjust our own thinking and language to their abstracting.

It is helpful to an interviewer if he learns to distinguish readily between two kinds of language: report language and symbolic language. The purpose of report language is to inform, and it is characterized by being capable of verification and being free from judgments, inferences, and loaded words. A job applicant tells an employment interviewer, "I am thirty-five years old. I have been married ten years and have two children." This is a report. Information given can easily be verified.

Affective symbolic language, on the other hand, serves to "move" or *affect* us. Through the use of what Hayakawa has called "snarl-words" and "purr-words" [8] the speaker seeks to obtain a sympathetic reaction from the listener. Our likes and dislikes are conveyed to others through the medium of affective language. In the interview situation the interviewer may hear, "The place where I used to work was no good. Supervisors got tough with the

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[7] Alfred Korzybski, *Science and sanity: an introduction to non-Aristotelian systems and general semantics* (2d ed.; Lancaster, Pa.: Science Press Printing Co., 1941, 806 pp.).

[8] Hayakawa, *op. cit.*, pp. 58–60.

workers. I never could get along with my boss, ————." Here we have an illustration of simple affective language. Dislike of a situation is expressed through the use of snarl-words. It is not for the interviewer to say that mis-representation is present. He should, however, recognize that he is dealing with an affectively toned judgment rather than a verifiable report; he should, through training, be able to distinguish between the two.

BELIEVING

It has been demonstrated that we are more likely to believe than disbelieve what we are told, particularly if a statement is made in the direct form of a report, or if it contains within it the suggestion of an answer. This latter case will be discussed in more detail later in the chapter. Current advertising illustrates directive report-like language. "Smoke Lion Heart Tobacco. It burns 98° cooler. No back-bite." The essence of directive language is the immediacy of its appeal. "Do it now. Tomorrow may be too late" is what we are told.

DIVERSION

The applicant may attempt inadvertently or otherwise to divert the main point of consideration to a less consequential point. Perhaps he tries in this way to hide a significant unfavorable fact concerning his work history. This is called diversion. An example may be given. The applicant might dwell upon an isolated instance of his past performance which is of slight conse-quence or has little relation to the position specification, but which may influence and impress the interviewer in such a way as to make the person being interviewed look quite favorable. His elaboration of a trivial, favor-able point may influence the decision to hire but actually may have no bear-ing on probable success on the job.

Wording the Question

Does the form of the question have any influence on the kind of answer the applicant is likely to make? Muscio, a British psychologist, did early

work on this problem.[9] He showed films two or more times to a group of people and then asked questions about them. He wanted to analyze the various mental processes operating in determining answers to questions. He used these eight forms of questions:

Did you see a . . . ?	indefinite article } positive }	
Did you see the . . . ?	definite article }	subjective
Didn't you see a . . . ?	indefinite article } negative }	
Didn't you see the . . . ?	definite article }	
Was there a . . . ?		
Wasn't there a . . . ?	objective	
Was the M, K?		
Was the K, M or N?		

Muscio said suggestion was present if there was any admission of the presence of an object—including correct as well as incorrect replies due to the suggestiveness of the question. He came to the conclusion that there was greater suggestiveness with the use of the indefinite article "a," with the use of the negative, and with the use of the subjective form in which the personal pronoun "you" occurred, e.g., "Didn't you see a . . . ?"

A similar study was done later by Burtt and Gaskill [10] using the first six questions, with somewhat modified conclusions:

> The results for the definite *versus* indefinite article are equivocal and no conclusions are warranted. There seems somewhat of a trend for the negative to cause greater suggestiveness when categorical answers are demanded and otherwise greater caution but this trend is contradicted in the comparison of questions in the subjective form with the definite article.
>
> The objective form of questions shows clearly a greater suggestiveness and also a higher degree of caution.[11]

In Burtt and Gaskill's study, the proportion of erroneous answers was assumed to be an indication of suggestiveness as affected by the form of the question.

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[9] Bernard Muscio, The influence of the form of a question, *British Journal of Psychology, 8:* 1916, 351–389.

[10] Harold E. Burtt and Harold V. Gaskill, Suggestibility and the form of the question, *Journal of Applied Psychology, 16:* 1932, 358–373.

[11] *Ibid.*, p. 373.

Many of us would agree with the idea that the way a question is stated will influence to some extent the kind of answer we get. Yet, in actual practice, many are giving only lip service to this statement; they continue their unguarded phrasing without regard for the pitfalls.

Jenkins,[12] aware of the work which Muscio and Burtt and Gaskill had done, considered other ways in which the wording of the question tends to reduce the dependability of answers. One of several major ways in which questions may influence answers is to bias or predetermine the answer. In legal practice if leading questions are used, the user is suspected of seeking a predetermined answer. The use of such questions as "When did you stop beating your wife?" is criticized and rigorously controlled. Questions are considered "leading" when they have been deliberately phrased in an effort to secure a particular answer. As such, they are a special form of the loaded question, that is, "the question in which some biasing influence increases the probability of response in a given direction." [13]

Sometimes questions elicit biased answers because only a few responses seem possible. For example, the question, "Did you like where you worked last?" may suggest to the applicant that "Yes, I did" or "No, I didn't" are the only alternatives available to him. He may be unwilling to use one of these two replies but feels constrained to do so. The answer may be worthless if he feels this way.

The order in which questions are asked of an applicant may likewise bias his answers. This is a hazard if the interviewer tries to construct a guide for interviewing by deciding on a "logical" order for the questions. This "logical" order may or may not be the best order from the psychological point of view. If an interview guide is to be prepared and used, the arrangement of the questions should be carefully pretested.

Another difficulty is that the interviewer might not anticipate in what context the applicant will set the question. The question, asked of a group of Negroes, "Do you take many colored pictures?" brought replies indicating they had used an ethnological frame of reference in replying to the ques-

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[12] John G. Jenkins, Characteristics of the question as determinants of dependability, *Journal of Consulting Psychology, 5:* 1941, 164–169.

[13] *Ibid.,* p. 165.

tion. If people have sufficient knowledge about the topic under discussion, the same answer is likely to be obtained regardless of the way questions are asked. On the other hand, where respondents lack familiarity with the context, they are highly suggestible to the implications of phrases, statements, innuendoes, or symbols that may serve as clues to help them make up their minds.

Another way in which questions may influence answers is by their exceeding the ability of the respondent to understand them. The difficulty level of words has already been discussed. The practice of asking two questions in one, so-called "double-barreled questions," seems so obviously unfair that one would expect it to dwindle and die. Still one repeatedly hears questions of this type: "Were the opportunities for advancement and the pay schedule at your last plant satisfactory to you?" A question which may be too hard to answer is of the sort that requires memory of events from several years back. Lazarsfeld [14] has made a case for helping the applicant to remember events better by "interviewing along the time-line." The individual is led by the use of accessory questions, perhaps unimportant in themselves, through the necessary temporal stages in order to reach critical questions. Sometimes the applicant may have difficulty in thinking in terms of the units of measurement asked; "How much time have you lost from sickness this past five years?" may be exactly what the interviewer wants to know, but it is a much harder, more unrealistic question than "How much time did you lose through sickness this last year (or month)?" The units should not exceed the ability of the applicant to use them efficiently.

Some questions influence answers because they invite inaccurate responses. Questions likely to embarrass the applicant will probably bring only inaccurate replies. "Have you ever been in jail for intoxication?" almost assures the answer "No" from prospective employees. Similarly, if the question is likely to incriminate the respondent, an accurate answer is highly improbable; for example, asking relief workers to confess their records of illicit employment while accepting relief. Questions may also invite inaccurate responses if a local situation prevails which biases the applicant one

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[14] American Marketing Society, *The technique of market research* (New York: McGraw-Hill Book Company, Inc., 1937), p. 64.

way or another. Questions about attitudes toward unions are likely to go afoul if a person has just been through a drawn-out strike which has been personally damaging for him.

Drake has furnished examples of incorrectly phrased questions:

Wrong: You wouldn't care to work the swing shift, would you?
Right: What shift do you prefer?

Wrong: You finished business school, I suppose?
Right: How many years of business school did you complete?

Wrong: This job calls for considerable planning. Do you like to plan?
Right: What experience have you had in organization and planning?

Wrong: Were you a stenographer or a secretary on your last job?
Right: What sort of work did you do on your last job? [15]

Summary

It is evident that the words and phrases used in the interview must be understandable. During the past two decades psychologists have developed ways of measuring the difficulty level of talk. The interviewer can test-check the understandability of his talk by these methods.

It is well also for the interviewer to know the problems that exist in communicating meanings. Language used in reporting facts is relatively simple; symbolic language is complicated and open to erroneous inference and misconstruction. The way questions are worded influences responses of the applicants. Moreover, the form, placing, and content of the questions may constantly affect the answers given in interviews.

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[15] Frances Drake, *Manual of employment interviewing* (New York: American Management Association, 1942), p. 32.

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ERRORS IN MAKING JUDGMENTS

Introduction

Suppose you are watching an interviewer through a one-way screen. He is attempting to judge whether the applicant would be able to deal with customers if hired as a salesperson. He observes a sample of the social behavior of the applicant and tries to make a highly generalized judgment based on this sparse sampling. Is he able to observe enough samples of the applicant's responses for valid judgment? Or is he making an erroneous, snap judgment?

People in general, interviewers included, have a tendency to make judgments on one or a very few observations. For example, an interviewer may hear the applicant use the wrong tense of a verb and conclude at once that he commonly makes grammatical errors. This might not be suitable or fitting in the environment for which a vacancy exists. But was the sample of observed behavior typical? Generalizations are often made on an atypical sample: the interview itself usually is an atypical setting. It is not at all similar to many of the job situations for which an applicant might be considered.

Another aspect of rating the applicant is his potential control over his behavior. He may expose only the kind of behavior he feels will convince the interviewer. He has a goal to achieve. This may cause the applicant to accentuate the positive, to expose only the more favorable aspects of his personal equipment.

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The interviewer himself is as complex as the person he is interviewing. His own characteristics are at least as important as any other aspect of the interview situation. This is abundantly clear from studies of how bias may contaminate the results of the interview, a subject we shall return to in this chapter.

The fact that two individuals are in an active interrelationship makes the interview a most fascinating, if complex, study. An important approach to improvement of the interview is the training of the interviewer to guard against fallacies in judgment, emphasizing systematic and objective approaches to the interview.

Errors in Judgments and Ratings

Because of the complexity of the interview situation and the human fallibility of the interviewer, errors are easily made in rating. This suggests the need for interviewers to train themselves to be aware of the nature and extent of the pitfalls in rating.

The error of rating higher those we know well than people we do not know is a common one. "We tend to be down on a person we're not up on." Many interviewers prefer to rate "almost average" rather than go out on a limb to make a judgment at the extreme, such as "very poor" or "excellent" (called "error of central tendency"). Some judges consistently rate harder or easier than the average of such ratings pooled by a group of judges. An interviewer's tendency to rate higher or lower than other judges is a systematic error which can be measured. Another common pitfall is rating a person rather high or at least average when we have no facts ("lenient tendency"). When shoppers (employees hired to judge a salesperson on the basis of a brief across-the-counter observation of behavior) rated retail salespeople in seven Pittsburgh stores, a decided tendency toward leniency was noticed.[1]

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[1] Natalie Kneeland, That lenient tendency in rating, *Personnel Journal,* 7: 1928–1929, 356–366.

"HALO" EFFECTS

Bingham has discussed the well-known "halo" effect in judgment ratings.[2] This is the tendency for ratings on certain separate characteristics to reflect to an unusual extent in the rater's general or over-all impression of the person he is rating. For example, if an interviewer is impressed by an applicant's grooming of hair he may rate him high in other characteristics unrelated to this aspect of personal appearance. Conversely, if an applicant appears untidy and unkempt, an interviewer may rate him low in many unrelated characteristics because of this one which has made an unfavorable impression. This kind of halo effect is invalid halo and is to be deplored.

As Bingham points out, there is another kind of halo, which he calls valid halo. This halo "cannot and should not be eliminated because it is inherent in the nature of personality, in the perceptual process, and in the very act of judgment." [3] An example is the effect of the speaking voice. This is characteristic of the person and as such enters into the over-all judgment of the individual. When the interviewer considers the individual in light of the job duties or situation, the "total personality" must necessarily be viewed. The effect of the speaking voice must be considered. This valid halo is to be differentiated sharply from the invalid halo.

CONTAGIOUS BIAS

"Contagious bias" is the label first used by Rice to describe the illicit influence of the interviewer upon interview results and upon their interpretation.[4] The extent of this bias is unknown. However, there is positive experimental evidence that in some situations it distorts the interview report and the decision which may be based upon it. Contagious bias may be present for either one of two reasons.

The interviewer may change the behavior of the applicant by subtle suggestion through the wording of the questions he asks, or he may give

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[2] W. V. Bingham, Halo, invalid and valid. *Journal of Applied Psychology*, 23: 1939, 221–228.

[3] *Ibid.*

[4] Stuart A. Rice, Contagious bias in the interview: a methodological note, *American Journal of Sociology*, 35: 1929, 420–423.

minimal cues which influence the behavioral responses of the applicant. A second explanation of bias is that the interviewer's interpretation of the interview observations may be changed to fit his own biases, but the result is the same—a wrong decision. These influences may or may not be unintentional but they are nonetheless real so far as the end result of the interview is concerned.

Rice first noticed contagious bias some years ago when a large interview program was undertaken in New York City to determine the cause of the destitution of some two thousand homeless men. Twelve experienced male interviewers, including some who were trained in social work, participated in the program. The interviewers followed a planned outline in questioning the men and probably attempted to be impartial and objective. In spite of this, interviewer bias crept into the interviews in a contagious way.

One of the interviewers in this program was a socialist and particularly interested in economic and political conditions. Another of the interviewers was an ardent prohibitionist. The socialist turned in reports which seemed to show clearly that a large portion of the men he interviewed blamed adverse industrial and economic conditions for their poverty. The prohibitionist, on the other hand, found that alcohol tended to be the chief contributing factor to the condition of the destitute men he interviewed. Compare the findings of the two interviewers: the prohibitionist reported that 34 per cent of the men allegedly ascribed their destitution to liquor, whereas the socialist found that only 11 per cent ascribed their downfall to liquor; the prohibitionist found that about 43 per cent of the men attributed their downfall to industrial conditions, whereas the socialist found that 60 per cent claimed that their plight was the result of industrial conditions. These data suggest that contagious bias can markedly influence the results obtained from the interview.[5]

Interviewers, to be sure, may be trained to guard against the fallacy of contagious bias. But contagious bias may operate in subtle ways. Words used by interviewers or applicants may be misunderstood, as we saw in Chapter 7. Inflection of the voice can also shade meaning. Read the following sentence aloud and, when the emphasis is placed on the different words, note how the meaning changes:

[5] *Ibid.*

1. *How* would you suggest we improve the interview?
2. How *would* you suggest we improve the interview?
3. How would *you* suggest we improve the interview?
4. How would you *suggest* we improve the interview?
5. How would you suggest *we* improve the interview?
6. How would you suggest we *improve* the interview?
7. How would you suggest we improve *the* interview?
8. How would you suggest we improve the *interview?*

Emphasis on a single word can change considerably the meaning of a sentence. The two participants, the questioner and the person questioned, can be imagined as each question is asked. One can almost tell from the way the question is stated what kind of an answer is expected. The applicant tends to answer according to the bias or prejudice which the interviewer has shown. The meaning or mood changes are, for the eight different emphases above, somewhat as follows:

1. Challenge, sincere plea: please help me.
2. Can it be done? I doubt it.
3. I can't do it, can you?
4. Let's be tentative in our recommendations.
5. Let's work together on it.
6. It's urgent; let's do it.
7. It's for a specific purpose.
8. The interview is all-important, forget the other things.

Let us take another kind of example. Suppose the interviewer has several alternate ways of phrasing the same idea; for example, suppose the question pertains to whether the applicant has a college degree. What is the effect upon the listener of each of these questions:

1. Did you graduate from college?
2. Of course you graduated from college, didn't you?
3. When did you graduate from college?
4. So you went to college, did you?
5. How far were you able to go in school?
6. I suppose you're another one of those college graduates, eh?

One man, anticipating resentment of his college training, as a result of cues he received early in the interview, said nothing about his advanced

education when applying for a job in a personnel department. Later some of his co-workers in the department boasted about how successful they were in keeping college men out of their firm!

One investigator, S. M. Harvey, wished to analyze the effect of the bias introduced by instructions given to an interviewer. He sought to determine "the effect of this attitude upon his, the interviewer's, diagnosis of certain character traits in his candidate." [6] Sociability and reliability were the characteristics being assessed. The results of the study indicated that a significant interviewer bias was present. He found that bias did affect judgment in about 40 per cent of the cases in which a set, or change in attitude resulting from changed interviewer instructions, was introduced. The results suggested to the investigator that there is such a thing as a fundamental interviewer frame of reference which may have a direct influence on interview findings. The method of introducing bias was to present either standard records or biased records to the interviewer.

The results make it clear that the interviewer is rather hard put to utilize observations he has made during the interview. Instead he tends to rely upon written records of past performance when he has them. He hesitates to use his own judgment in the interview, saying, in effect, "I don't believe my own observations; I should rather use the results of the case study —the written report."

FALSE STEREOTYPES

Virtually everyone makes personality judgments of other people. This is usually done informally as in the following situation. Three men were talking in a group when Mr. Joyce came down the corridor. They spoke, shook hands, and Mr. Joyce passed on. Mr. Brown remarked to the others, "Joyce is a plutocrat, isn't he?" This is a cliché, a trite or hackneyed expression. It is as if Mr. Joyce were produced by a stereotype (which in the language of printers is a plate made by taking a mold or matrix of a printing surface and making a cast from this in type matter). Frequently in our everyday speech,

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[6] S. M. Harvey, A preliminary investigation of the interview, *British Journal of Psychology, 28:* 1937–1938, 284.

we use words symbolizing such stereotypes. Listeners are likely to agree and say such things as, "Yes, Joyce *is* a plutocrat." The net result of the conversation is next to nothing—the observation and discrimination are meaningless and the word itself (plutocrat) only adds to the state of verbal confusion of the participants.

Other stereotypes familiar to most of us are those related to nationalities. What are your stereotypes of a Swede? of an Irishman? Notice the stereotypes of the Irishmen which appear in the first recorded efficiency report in the files of the War Department. (See Figure 14.) Similar stereotypes based on the job one holds or has held in the past are also familiar. The senator, if we were to believe the movies and the comics, smokes cigars, has a huge paunch, wears black suits, does little work. A cashier for a bank is a quiet Casper Milquetoast, wears glasses, rarely speaks above a demure whisper.

Certainly an interviewer or a rater holding such stereotypes, and being influenced by them in his decision to hire, would be likely to make questionable decisions.

Many stereotypes are related to physiognomy. It has been pointed out in an earlier chapter that this pseudo method of selection does not stand up under rigorous objective scrutiny. Yet we still hear of interviewers who turn down an applicant because of his "weak chin," "shifty eye," or "red-head's temper." If appearance is noted and judged in an interview, it should be for the purpose of determining its appropriateness for the job at hand. However, personality inferences from appearances are generally erroneous. Table 5 shows the "traits" and characteristics included for evaluation in interviewlike situations, along with the validity and reliability of the ratings.

Not only do we use clichés in our informal everyday conversation; we also tend to use them when we write up the results of an interview. How valid are these designations? What is the degree of their fallibility? Answers to these questions are being sought by research. In the meantime an important objective is to put the interviewer on his guard to look out for common errors and pitfalls in these kinds of judgments and classifications.

Lower Seneca Town
August 15, 1813

Sir:

I forward a list of the officers of the 27th Regt. of Infty. arranged agreeably to rank. Annexed thereto you will find all the observations I deem necessary to make.

Respectfully,
I am, Sir
Yo. Obt. Servt.
Lewis Cass
Brig. Gen.

*   *   *   *   *   *

27th Infantry Regiment

Alex Denniston—Lieut. Col., Comdg.   —A good natured man.

Clardson Crolins—First Major   —A good man, but no officer.

Jesse D. Wadsworth—2nd Major   —An excellent officer.

Captain Christiem Martel
"   Aaron T. Crane
"   Benj. Wood   —All good officers.
"   Maxwell
"   Shotwell

"   Allen Reynolds   —A man of whom all unite in speaking ill. A knave despised by all.
—An officer of capacity, but impudent and a man of most violent passions.

"   Danl. Warren Porter   —Stranger but little known in the regiment.

First Lieut. Jas. Kerr
"   "   Thos. Darling   —Merely good, nothing promising.

"   "   William Perrin
"   "   Danl. Scott   —Low vulgar men, with exception of Perrin, Irish and from the meanest
"   "   Jas. I. Rayn   walks of life—possessing nothing of
"   "   Robt. McElwrath   the character of officers or gentlemen.

FIGURE 14

THE FIRST RECORDED EFFICIENCY REPORT IN THE FILES OF THE WAR DEPARTMENT

" " Robt. P. Ross

—Willing enough—has much to learn with small capacity.

" " Hall

—Not joined the regiment.

2nd Lieut. Nicholas G. Carner

—A good officer but drinks hard and disgraces himself and the service.

" " Stewart Elder

—An ignorant unoffending Irishman.

" " Mc Conkey

—Raised from the ranks, ignorant, vulgar and incompetent.

" " Piercy
" " Jacob J. Brown
" " Thos. G. Spicer
" " Oliver Vance

—Come from the ranks, but all behave well and promise to make excellent officers.

Third Lieut. Royal Geer
" " Mears
" " Clifford
" " Crawford
" " Mc Keen

—All Irish, promoted from the ranks, low vulgar men, without any one qualification to recommend them. More fit to carry the hod than the epaulette.

" " John G. Sholtz
" " Francis T. Wheeler

—Promoted from the ranks, behave well and will make good officers.

" " Darrow

—Just joined the regiment—of fine appearance.

Ensign Behan

—The very dregs of the earth, unfit for anything under heaven. God only knows how the poor thing got an appointment.

" John Brown
" Bryan

—Promoted from the ranks—men of no manner and no promise.

" Charles West

—From the ranks. A good young man who does well.

FIGURE 14 (CONT'D)

TABLE FIVE

TRAITS AND CHARACTERISTICS VARIOUSLY INCLUDED FOR
EVALUATION IN INTERVIEW-LIKE SITUATIONS

(Showing the frequency of mention and the validity and reliability reported in different experiments)

TRAIT OR CHARACTERISTIC	FREQUENCY	RELIABILITY	VALIDITY	
Ability to get along with others	4			
Ability to present ideas	3	.42		
Academic grades	1		.66	.73
Adjustment	1			
Alertness	4	.36		
Anger	1	.77		
Appearance	11	.34	.13	
Assertiveness	1	.74		
Attentiveness	2			
Attitudes	2			
Background, academic	2		.29	
Background, athletic	1		.19	
Background, family and socioeconomic	1		.20	
Bearing	2			
Beauty	1			
Brightness in conversation	1			
Character	1			
Cheerfulness	1	.60	.16	
Conceit	1			
Cooperation with equals	1	.52		
Cooperation with subordinates	1			
Cooperation with superiors	1	.55		
Courtesy	2			
Curiosity	1	.37		
Dependability	1			
Determination	1			
Disgust	1	.42		
Emotional balance	2			
Energy	1	.64		

Source: Ralph Wagner, The employment interview: a critical summary, *Personnel Psychology*, 2: 1949, 36–38.

TRAIT OR CHARACTERISTIC	FREQUENCY	RELIABILITY		VALIDITY	
Enunciation	1				
Experience	2				
Facial expression	1				
Facility and effectiveness of expression	3				
Familiarity with current events	1				
Fear	1	.75			
Fitness for training	1			.25	
Forcefulness	1				
Frankness	1				
Friendliness	1				
Health	1				
Hobbies	1			.30	
Humor	2			.13	
Imagination	2				
Impulsiveness	2	.23			
Industry	3	.54			
Initiative	3	.57			
Integrity	1				
Intelligence or mental ability	6	.96	.87	.58	.82
		.77	.62	.45	.94
		.90		.51	.70
Interests	2				
Judgment	5	.31			
Knowledge	1				
Language usage	4				
Leadership	4				
Likableness	1				
Manner	7	.38			
Manner of expression	1				
Mannerisms	3			.13	
Maturity	1				
Mechanical aptitude	1				
Motivation	1				
Neatness	3	.23			
Originality	2				
Participation in the interview	1				
Personality	3			.21	

TRAIT OR CHARACTERISTIC	FREQUENCY	RELIABILITY			VALIDITY	
Pleasingness of attitude and manner	1					
Poise	3					
Posture	1					
Prejudices	1				.09	
Profoundness	1					
Punctuality	1					
Question-asking and -answering ability	1				.13	
Quickness	2	.61				
Reasonableness	1					
Refinement	1					
Reliability	1	.36				
Resourcefulness	1					
Responsiveness	1					
Self-confidence	3	.77				
Sex	1	.51				
Sincerity of purpose	1					
Size	2					
Sociability	3	.87	.72		.37	
Social adeptness	1					
Social adjustment	1				.22	
Sorrow	1	.56				
Speech	1					
Submissiveness	1	.85				
Tact	3	.26				
Teaching ability	1					
Temperament	1					
Tenderness	1	.68				
Training	1					
Understanding of human problems	1					
Vitality	1					
Voice quality	5					
Will power	1					
Over-all ability	11	.71	.48	.24	.27	.21
		.20		.26	.16	.87
		.43	.68	.61	.23	
		.85	.55			

In our everyday conversation with others, as well as in our literature, we think of, judge, and designate people as: [7]

aggressive	loyal
agreeable	nervous
carefree	objective
conscientious	optimistic
cooperative	patient
enthusiastic	persevering
extrovert	righteous
forthright	sexy
honest	sociable
industrious	vigorous
intelligent	vivacious

INFLUENCE OF EXTRANEOUS FACTORS

Extraneous factors are known to influence interviewers' judgments on unrelated characteristics. For example, the wearing of glasses has been shown by Thornton to influence interviewers' ratings of such traits as honesty, industriousness, dependability, and intelligence. In his first study Thornton found that persons photographed wearing glasses were usually rated significantly higher in intelligence, dependability, industriousness, and honesty than were the same persons when photographed without glasses. [8]

In his second experiment [9] the procedure was somewhat different. The subjects appeared briefly, for about two minutes, before two groups of judges. They appeared before one group wearing glasses and before the

[7] Allport and Odbert collected 9653 terms, most of them adjectives, which designated "distinctive and personal forms of behavior."—G. W. Allport and H. S. Odbert, Trait names: a psycho-lexical study, *Psychological Monographs*, No. 211, 1936. As an illustration of how much work is being done in this general area, in an advanced psychology textbook of 999 pages on personality, the author cites 749 references to writings bearing on personality and says: "The literature . . . is huge, and an attempt to summarize it would be outside the manageable compass of such a book as this . . . ."—Gardner Murphy, *Personality* (New York: Harper & Brothers, 1947), p. x.

[8] G. R. Thornton, The effect upon judgments of personality traits of varying a single factor in a photograph, *Journal of Social Psychology*, 18: 1943, 127–148.

[9] G. R. Thornton, The effect of wearing glasses upon judgments of personality traits of persons seen briefly, *Journal of Applied Psychology*, 28: 1944, 203–207.

other group without glasses. The judges were able to get additional cues which could not be present in the case of photographs. This situation was, of course, more closely related to conditions prevailing during the interview. It is interesting to examine the results to see whether there were significant differences in the judgments that might be attributed to wearing or not wearing glasses.

> Groups of judges rated individuals presented one at a time in person . . . . The subjects appeared before some groups wearing glasses and before other groups without glasses. The results obtained for subjects appearing in person indicate that wearing glasses tends to cause persons to be rated more intelligent and more industrious but probably not more honest.[10]

While the results of Thornton's investigations do not necessarily apply to all subjects and to all interviewing situations, the findings are suggestive with respect to stereotypes. If we may generalize on the basis of the experiments made by Thornton, interviewers as a group probably respond to common stereotypes. The experimental results achieved by Thornton emphasize the need for interviewers to be on guard against their stereotypes and to attempt to allow for them when making decisions.

Other Errors by Judges

Guilford gathered a list of conditions related to errors made by judges and presented conclusions from studies of error. These conclusions are based on objective evidence gathered by competent investigators. Some of the items in Guilford's list, together with the names of investigators who studied the problem, are as follows:

1. Individuals differ in the capacity to judge others, but there is no such thing as a general judicial capacity.—Hollingworth, Wells.

2. Raters disagree because they observe the individuals in different types of situations.—Remmers, Plice, Arlett, Dowd, Webb.

3. Two ratings by the same judge are no more valid than one.—Slawson. The reason for this is apparently that a rater repeats the same constant errors a second time, and the means of his ratings there-

[10] *Ibid.*, p. 207.

fore deviate just as far from the truth as do the single judgments.

4. Judges should have sufficient time for making the ratings.—Conrad.

5. The good judge is not necessarily self-consistent.—Hollingworth. Nor is the self-consistent judge necessarily a good judge.—Slawson.

6. For certain admirable traits there is a positive correlation between possession (of the trait) and the ability to judge. The reverse of this is true in general for undesirable traits.—Hollingworth.

7. One who knows himself best also judges others better in certain traits.—Hollingworth.

8. Raters should be carefully trained by discussing the distribution of abilities, describing the scale, cautioning against errors such as the halo effect, central tendency, overrating, prejudice, and the logical error.

9. Men are more lenient in their ratings than women.—Hart, Olander.

10. There is a tendency to overrate members of the same sex as compared with members of the opposite sex.—Kinder.

11. The assurance of a judge is of some importance. Judgments of which he is very sure are much more reliable than ordinary ratings.—Cady.

12. Ratings may be influenced by the judges' knowing the purpose for which they are to be used. To avoid this error, ratings should be secured with the judges in ignorance of their use and if possible at a time in advance of the situation demanding their use.—Paterson.

13. Different judges use different criteria in judging the same trait. For this reason it is sometimes desirable to ask the rater to state the basis upon which his own judgments are made.[11]

Research Problems

The principal objective of interview research is the development, evaluation, and application of interview procedural systems to answer such questions as these:[12] What procedures are most reliable and valid? What

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[11] By permission from *Psychometric methods,* pp. 276–277, by J. P. Guilford. Copyright, 1936. McGraw-Hill Book Company, Inc.

[12] Research problems in the study of reliability and validity of the employment interview are well described in W. J. E. Crissy, The employment interview—research areas, methods, and results, *Personnel Psychology, 5:* 1952, 73–85.

is the best form for recording information obtained during the interview? Should ratings be done during or after the interview? Should the interview be conducted by two or more interviewers observing the interviewee at the same time? Or should interviewers interview the subject separately and independently? Should their judgments be pooled and if so, how can they be made into a composite predictor index? When should electronic recordings be made? How long should the interview be? How much should the interviewer talk? How nondirective or directive should the interviewer be?

These questions can be answered only through study of the problems inherent in each interviewing environment. What is found in one interviewing situation might not necessarily apply to another interviewing situation. Thus continuous research is necessary if the interview per se is to be improved.

It must be emphasized that research on the interview is in its infancy. Recently there have been a few studies on the reliability and validity of interviews,[13] but most of these studies have been of a minor sort, being conducted by one individual and on a small number of cases. At the present time, there is a paucity of studies of a program nature which make any concerted attack on the questions concerning the interviewing problem.

Symonds has presented a list of factors which might cause variations in the goodness of the results of interviews. Nearly all of the items on his list are research areas of interest to interviewers. He classifies them thus: (1) factors inherent in the subject; (2) factors inherent in interviewer; (3) factors in the general situation in which the interview is conducted; and (4) factors in the form and content of the interview.

Differences in the responses made by the applicant in an interview may be attributable to

1. *Factors Inherent in the Subject.*—
    a. Age of subject
    b. Intelligence of subject
    c. Sex of subject

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[13] Ralph Wagner made a critical summary of the employment interview, surveying 106 titles concerned with the interview as a means of evaluating traits; of these, only 25 were reports of actual experiments; 81 were "a hodge-podge of contradicting opinions."—Ralph Wagner, The employment interview: a critical summary, *Personnel Psychology, 2:* 1949, 17–46.

    d. Race of subject

    e. Socio-economic level of subject

    f. Language facility of subject

    g. Emotional need of subject

    h. Emotional security of subject

    i. Subject's attitude (transference) toward interviewer

    j. Subject's previous acquaintance with interviewer

    k. Purpose with which subject comes to interview

2. *Factors Inherent in the Interviewer.—*

    a. Age of the interviewer

    b. Sex of the interviewer

    c. Intelligence of the interviewer

    d. Race of the interviewer

    e. Socio-economic level of the interviewer

    f. Position or authority of the interviewer with reference to the subject

    g. Personality of the interviewer (social warmth, sympathy, outgoingness, human interest, vitality)

    h. Social outlook of the interviewer

    i. Psychological understanding of the interviewer (his ability to sense or feel the purposes, needs or drives, mechanisms of the subject)

    j. Interviewer's previous acquaintance with the subject

    k. Use interviewer can be to the subject

    l. Interest of interviewer to subject

3. *Factors in the General Situation in Which the Interview Is Conducted.—*

    a. Place of interview

    b. Time of interview

    c. Persons present

    d. First, second, or subsequent interview

    e. Experiences of subject directly preceding interview

    f. Emergency character of interview (see "g" under Factors Inherent in the Subject)

    g. Directions given subject preceding the interview

    h. Voluntary *vs.* non-voluntary nature of interview

4. *Factors in the Form and Content of the Interview.—*

    a. Content of questions

b. Form of questions
c. Interpretation, suggestions, or other reactions of interviewer
d. Telling subject purpose of the interview
e. Relieving subject as to the identity of the interviewer
f. Encouragement given by interviewer
g. Remarks interpolated by examiner during the interview [14]

Symonds recognized that this list of suggestions could easily be expanded by others with interviewing and research experience. It is apparent that even a small improvement of interviewing procedures can aid all concerned, and result in greater productivity and greater job satisfaction of employees selected by the interview.

Summary

Most interviewers tend to make judgments on one or a very few observations. Because of the complexity of the interview and the human fallibility of the interviewer, the latter easily makes errors in rating applicants. This suggests the need for him to train himself as to the nature and extent of the pitfalls in rating.

The psychological literature contains numerous studies on errors in rating. Among them is the "halo" effect, the tendency for ratings on certain separate characteristics to reflect in the rater's over-all impression of the person he is rating. Another error is "contagious bias," a term which describes the illicit influence of the interviewer himself on the accurate reporting and interpretation of interview findings. Virtually everyone has false stereotypes, another error frequently made in judging others. These are cliché or hackneyed expressions we habitually use for description, such as "plutocrat," without careful consideration of the observation we have made.

Numerous other aspects of ability to judge applicants are important for interview improvement. The last section of the chapter includes a list of factors inherent in interviewing which may affect the goodness of the interview results. They are presented as suggestive research problems.

[14] Percival M. Symonds, Research on the interviewing process, *Journal of Educational Psychology, 30:* 1939, 346–353. Reprinted by permission of the *Journal*.

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INTERVIEW GUIDES AND SYSTEMATIC RATINGS IMPROVE JUDGMENTS

Introduction

The data derived from observations made during the interview are subjective. However, this does not mean that technology can do nothing to improve the value of interview observations. Standardized interview guides help to appraise the subjective judgments, since they furnish data that can be analyzed statistically.

The structured or guided interview is different from the free interview in several respects. Both have advantages and disadvantages. If the interview is highly structured and standardized, pertinent information might be overlooked. On the other hand, if the interview is free, without any structuring at all, it may skip over or not touch on the facts that are pertinent in prediction of success or failure on the job.

The Patterned Interview

The patterned interview is a device to help interviewers train themselves. It may furnish an opportunity to sharpen ratings on observations during the interview as well as yield information pertaining to the past experience of the applicant. Conditions for the patterned interview as set forth by McMurry follow:

1. The interviewer works from definite job specifications, he knows what qualities each job requires (in reports of typical interviews there is not sufficient evidence that the interviewers think of the same job when interviewing applicants).

2. He has a plan; he knows what questions to ask. (Usually the interviewer follows a crude method of getting sufficient information upon which to base a decision.)

3. He has been trained in interviewing technique, how to establish rapport, how to obtain pertinent information. (Interviewers are frequently picked from available and willing participants, with no formalized training.)

4. Prior to the interview, he has already discovered a great deal about the applicant, from telephone calls to previous employers, etc.

5. The interviewer himself has been carefully selected for his fitness in interpreting and evaluating the information obtained from the applicant.[1]

The interview guide provides a frame of reference for observing those segments of the applicant's behavior which are judged to be appropriate and necessary for the job concerned. Use of a written guide, carefully prepared, may help prevent the interviewer from trying to observe the kind of thing (e.g., intelligence) which can be better obtained from other sources (e.g., objective tests). He can set down on paper, in a systematic way, soon after the interview, evaluations or scores for the several aspects he is trying to rate. He is better able to justify his ratings of various aspects of the applicant's qualifications by citing specific examples. Later, his ratings may be examined statistically in the light of the man's performance on the job. If he has used an objective written guide, he has a record for observing his own performance, and evaluating his skill in selection.

The interview guide used in the Kroger Grocery and Baking Company for the selection of store personnel is shown as Figure 15.[2] This aid is used in the selection of store manager and head meat-cutter trainees, and pro-

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[1] Robert N. McMurry, Validating the patterned interview, *Personnel* (American Management Association), *23:* 1947, 263–272. Reprinted by permission of the American Management Association.

[2] This form is still in the experimental stage. It has been developed by Glenn A. Mitchell and William J. Flynn, Jr., who have given permission to reproduce the form.

spective management personnel. It is a small pocket-sized card that may be kept on the interviewer's desk during the interview. It has suggestions on how to put the applicant at ease, get his story, get all the facts, and get him off to a good start. During the interview the interviewer checks three key qualifications of the applicant: his personality, his interest, and his ability. The interviewer rates the applicant on each one immediately after the interview—using "A" for Superior, "B" for Good, "C" for Doubtful, and "D" for Poor.

Forms such as the one used in the Kroger Company lead to objective appraisal of the efficiency of the interviewer. More important, they yield data in such a form that they can be validated in much the same way as are tests or application blanks. Moreover, Otis has found that use of the standardized interview, or an interview based upon an outline, requires less time to obtain a given amount of information than the free or uncontrolled interview.[3]

The Validity of the Patterned Interview

In one company a patterned interview was successfully used for the selection of brokerage salesmen.[4] During the interview, the applicant was asked to spend about five minutes reviewing his life history to date. He then repeated it in more detail; the interviewer asked specific questions, particularly with reference to interest and motivation, e.g., "Why did you decide to major in economics?" At the end of the interview the interviewer rated the applicant on eight areas. These were occupational experience, education, intelligence, initiative, ambition, social ability, emotional stability, and interest. Both "positive" and "negative" types of evidence were listed as aids in making the ratings.

These eight ratings were reviewed by the interviewer after the interview, and an over-all composite rating was prepared. A person who was good in all but one of the eight qualifications might be rejected if it was felt in

[3] Jay L. Otis, Procedures for the selection of salesmen for a detergent company, *Journal of Applied Psychology*, 25: 1941, 30–40.

[4] The company which has furnished these data has requested that its name not be mentioned.

EVALUATE THE APPLICANT ON EACH OF
THE THREE KEY QUALIFICATIONS

Immediately after the interview rate
the applicant on each qualification.

Use "A" for Superior
"B" for Good
"C" for Doubtful
"D" for Poor

RECORD YOUR EVALUATION ON THE
APPLICATION BLANK

In the space designated, simply record
the three letters which represent your
evaluation. Record your letters in the
same order as the key qualifications
appear on this guide.

Thus, AAC would mean: the appli-
cant is Superior on Personality and
Interest, but Doubtful on Ability.
Record any three letter combination
which best tells the story of your
evaluation of the applicant.

Form 3103

THE INTERVIEW GUIDE

HOW TO INTERVIEW
PROSPECTIVE STORE CLERKS

PUT THE APPLICANT AT EASE
Be friendly and courteous.
Provide privacy — away from other
people.
Be a good listener; let him talk.

GET HIS STORY
Why he wants a job.
Why he is interested in Kroger.
What he can do.

GET ALL THE FACTS
Take enough time.
Ask questions with a purpose.
Avoid general impressions and hasty
judgments.

GET HIM OFF TO A GOOD START
Tell him about the Company and the
job.
Tell him about insurance, vacations,
pay increases.
Give him a copy of "YOUR JOB
WITH KROGER."
Introduce him to his immediate super-
visor.

Consider both THE MAN *and* THE KROGER CO.

FIGURE 15 (PART 1)

INTERVIEW GUIDE USED IN THE KROGER COMPANY

Source: Used by permission, The Kroger Co.

his case that the deficiency was particularly important in the job he applied
for. Another individual who had only moderately high ratings in all eight
areas would be accepted for further consideration. Thus the interview with
this procedure was in some respects the "clinical" type (see Chapter 3).

Some of these ratings proved to have considerable value in predicting
which applicants would be successful in the company. To determine how
useful the ratings were, forty-one men who had been hired were selected for
study. Twenty-eight of the men were judged to be "successful," meaning
that they had stayed with the company for three years. This criterion was
used because it takes about three years for a brokerage salesman to return
the company's investment in him. Thirteen men were "unsuccessful" by this

CHECK THE 3 KEY QUALIFICATIONS

I. PERSONALITY	*How Will He Impress Mrs. Smith?* Observe him carefully. Is he clean, neat, and courteous? Can he talk well? Does he smile? Is he grown up enough? *How Will He Get Along with the Manager and with Other Clerks?* Ask questions such as, "How did your last boss treat you?" "Why did you quit?" Encourage him to talk. Watch for "touchy" spots; think twice about the man who has had "troubles"—on the job, with family, at school, etc.
II. INTEREST	*Does He Have Personal Interest to Work For?* Check application, ask questions. Does he have responsibilities?—Rent or board to pay, insurance, etc., particularly dependents. Avoid the man who can "get by" without working (wife or family will support.) *Are His Job Interests in Line with Our Business?* Ask questions such as, "Why do you want to work in a grocery store?" "Why did you choose Kroger?" Does he like people? Encourage him to sell himself. Is his interest real? Is he changeable in interests or jobs? A "floater?"
III. ABILITY	*Does He Have Ability to Succeed?* Is he physically fit? Check application, ask questions, especially about time lost for illness. Is he mentally fit? Does he appear dull? Is his education sufficient? Will he learn easily? If he claims experience, check its value by careful questioning *Will He Be Promotable?* Review the interview in your mind. After training and experience, is it likely that this applicant will move ahead with the Company?

FIGURE 15 (PART 2)

definition; few of the unsuccessful were fired, most resigned. Some who were good in sales resigned but were still called failures because they failed to meet the criterion. When the eight ratings were correlated against the criterion of success, the correlation coefficients shown in Table 6, indicating relationships between ratings and criterion, were found.

Use of the over-all rating obtained after consideration of the eight variables as described in this situation tended to reduce the amount of guesswork. Without systematic appraisal of some sort, the usual selection inter-

TABLE SIX

RELATIONSHIP BETWEEN RATINGS MADE AFTER A
PATTERNED INTERVIEW AND TENURE

VARIABLE RATED	COEFFICIENT OF CORRELATION [a]
Occupational experience	0.43
Educational experience	0.42
Intelligence	0.16
Initiative	0.50
Ambition	0.40
Social ability	0.61
Emotional stability	0.00
Interest	0.47
Over-all rating	0.48

a Inasmuch as ratings formed part of the basis for selection, the applicants who would have tended to be unsuccessful were not hired. These coefficients have been corrected for restriction of range brought about by selection of the applicants in this way.

Source: The company which has furnished these data has requested that its name not be mentioned.

viewer is probably as likely to be wrong as right. However, if predictors such as the over-all rating described here are available and have demonstrated validity for selection, the interviewer could lessen the amount of error he makes.[5]

The validity of the patterned interview is considered in a series of studies reported by McMurry. "The patterned interview is principally a fact-finding procedure, combining information obtained from the applicant with data received from schools and previous employers."[6] This study utilized a total of 587 workers. The interviews were conducted at the Link-Belt Company in Chicago, beginning in 1943. The interviewers were members

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[5] The forecasting efficiency of the over-all rating was a reduction in error of 12 per cent. The technique for deriving the forecasting efficiency may be found in Harold E. Burtt, *Principles of employment psychology* (rev. ed.; New York: Harper & Brothers, 1942), pp. 550 ff.

[6] McMurry, *loc. cit.*, p. 263.

of the company's employment staff, trained in the patterned interview procedure.

Ratings made by the employees' foremen were one of the criteria used for the follow-up to validate the results of the patterned interview. The foremen were asked to divide their men, who had previously been interviewed by use of the patterned interview, into two equal groups, "above average" and "below average," taking into consideration their productivity, their attitudes toward supervision, and their general, over-all desirability as employees. The foremen were requested to indicate which ones in the above-average group were outstanding. Similarly they were asked to indicate who in the below-average group were most clearly unsatisfactory. This provided a four-step grouping of employees in terms of their over-all worth. When possible, two or more such ratings were obtained by raters rating independently. Comparisons were then made between ratings made by different raters. Where disagreements existed, the foremen-raters were asked to discuss individual cases and reach an agreement of the employee's true worth. Another criterion utilized in this study was the length of service with the company. The period of follow-up was one and a half years after the men had been initially employed.

The data were analyzed by computing coefficients of correlations between length of service and interviewers' initial ratings. Table 7 shows the results obtained on the 587 cases. Approximately 18 per cent of the variance contained in the success of the man, defined in terms of length of service, could be predicted by the interviewer ratings (Pearson correlation coefficient was 0.43). In other words, a fairly low but at the same time statistically significant relationship was found to exist between the original interviewers' ratings and the length of time on the job.

We may also compare initial interview ratings with those made by the foremen one and a half years later (for the 407 employees remaining on the job). These results are shown in Table 8. In this case, the relationship between job ratings by foremen and interviewer ratings was fairly high: approximately 46 per cent of the variance (Pearson correlation coefficient was 0.68) of the men's success as rated by the foremen could have been predicted by the interviewers' ratings. It is fair to conclude that the interview in this case of Link-Belt workers was worth using.

TABLE SEVEN

COMPARISON OF INTERVIEW RATINGS WITH LENGTH OF SERVICE
(Employees who left before May 1, 1944)

	INTERVIEWERS' RATINGS		
LENGTH OF SERVICE	1 *(Outstanding)*	2 or 3 *(Good or Fair)*	4 *(Unsatisfactory)*
1 year and over	33 (45.8%)	128 (28.9%)	3 (4.3%)
6 months to 1 year	20 (27.8%)	129 (29.0%)	4 (5.7%)
3 months to 6 months	8 (11.1%)	65 (14.6%)	7 (10.0%)
2 months to 3 months	6 (8.3%)	45 (10.1%)	7 (10.0%)
1 month to 2 months	4 (5.6%)	38 (8.5%)	7 (10.0%)
1 week to 1 month	1 (1.4%)	26 (5.7%)	14 (20.0%)
Less than one week	0 (0.0%)	14 (3.2%)	28 (40.0%)
Total	72 (100.0%)	445 (100.0%)	70 (100.0%)

Pearson coefficient of correlation was 0.43.

Source: Robert N. McMurry, Validating the patterned interview, *Personnel* (American Management Association), *23:* 1947, 269.

Examples of Interview Guides in Use

A notable example of work on structuring and standardizing the interview may be found in the study of public contact employees working for a large personal loan organization, the Household Finance Corporation. These studies were reported by Hovland and Wonderlic.[7] They developed a form in four sections, designed to provide the information pertinent to the jobs for which the applicant was being considered, which they called *Diagnostic*

[7] Carl Iver Hovland and E. F. Wonderlic, Prediction of industrial success from a standardized interview, *Journal of Applied Psychology, 23:* 1939, 537–546.

TABLE EIGHT

COMPARISON OF INITIAL INTERVIEW SCORES
WITH SUCCESS RATING

(Men and Women Combined)

FOREMEN'S SUCCESS-ON-THE-JOB RATING	INTERVIEWERS' RATINGS			
	1 *(Outstanding)*	2 *(Good)*	3 *(Fair)*	4 *(Unsatisfactory)*
Outstanding	6 (35.3%)	8 (47.1%)	3 (17.6%)	
Above Average	2 (1.2%)	88 (53.0%)	75 (45.2%)	1 (0.6%)
Below Average		13 (6.6%)	175 (88.8%)	8 (4.6%)
Very Poor			4 (14.8%)	23 (85.2%)

Pearson coefficient of correlation was 0.68.

Source: Robert N. McMurry, Validating the patterned interview, *Personnel* (American Management Association), *23:* 1947, 270.

Interviewer's Guide. (See Figure 16.) A guide of this kind is valuable for a number of purposes, not the least of which is checking or verifying the reliability and validity of the interview.

The employment interviewing was done by branch managers and supervisors. The company was large and decentralized, a fact which suggests the need for providing some uniformity in hiring practices and in gathering information for use in the central personnel department. A guide and a manual were also needed for training interviewers. The *Diagnostic Interviewer's Guide* was designed to meet these needs.

The guide that was developed contained four pages of questions which covered the applicant's work history, family history, social history, and personal history (see Figure 16).[8] Each of the four sections of the guide provides a series of standardized questions for the interviewer to ask. At the bottom of the pages are questions which the interviewer himself answers

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[8] The interview blank is available from The Psychological Corporation, 522 Fifth Avenue, New York 36, N.Y.

(+18)

DIAGNOSTIC INTERVIEWER'S GUIDE

NAME _Harry R. Johns_   DATE _5/25/37_
ADDRESS _813 Cherry St._   INTERVIEWER _E.F.J._

The interviewer should begin each interview with this statement to himself, "This applicant will impress me according to my past experience with persons who remind me of him. Consequently I must be on my guard against such prejudices which may naturally arise on account of this. I must keep a record of the facts and judge the applicant on the basis of the facts only. The applicant is a blank to me now." (Interviewer should write out information received as answers to the questions in the space left for that purpose.) If extra space is needed use separate sheets of paper. All of this material should be included with the blank itself when returned to the personnel department. The questions which are listed below for the interviewer to ask the applicant are suggestive. Other queries pertinent to the applicant's history will naturally suggest themselves to the interviewer as he contacts the applicant.

Please read special instructions on last page before interviewing.

WORK HISTORY:
Interviewer says—
1. Give me the names of your past employers. Begin with the last or present employer and go backward. Tell me:
    (a) How you got the job,
    (b) What you did, and,
    (c) Why you left.
    Smith Hardware Co.
    Job through uncle
    3 mos. still there Counter clerk & delivery boy
    Waited on tables while working way through college

2. How did your previous employers treat you? _fine - no complaints_

3. What experience of value did you get from each job? _meeting people_

4. Did you do work of such quality that your employer would be glad to recommend you? _Yes - Expecting a raise_

5. Were you ever criticized for the kind of work you did? Give me some examples of mistakes or failures. _Once for wasting too much time talking with customers_

6. Can you give me any example of success in your experience, particularly in handling people? _Sold large order of goods to hard-to-sell customer during spare time_

7. What kind of work did you enjoy the most and seem to progress the best in? _$5.00 Extra Commission_
    ✓(a) Mechanical work? _Edited school paper_
    (b) Clerical and detail work? _cleared $1,500.00_
    ✓(c) Contact work?
    or (d) Do you know?
    (+4 / -4)

When the interviewer has secured as much information as it is possible for him to get concerning every phase of the applicant's work history, he should ask himself the following questions:

1. What kind of work history does the applicant have?

    ⊖ Poor — Fair ‖ Good — Excellent (+)

2. Has it been the type of work which has required meeting and handling different types of people? ⊕ Yes ‖ No (−).
3. Has the applicant indicated ability to work consistently? (+) Yes ‖ No ⊖.
4. Has the applicant indicated a serious and sincere attitude toward the work he has been doing? ⊕ Yes ‖ No (−).
5. Has the work been such as to necessitate the development of habits of persistence and aggressiveness? (+) Yes ‖ No ⊖.
6. Has the work history indicated a capacity for growth? (+) Yes ‖ No ⊖.
7. Does the work history reveal habits or attitudes which would make it easy for the applicant to adjust himself to the policies and procedures of this company? ⊕ Yes ‖ No (−).
8. Is this man a good soldier as evidenced by good team-work? ⊕ Yes ‖ No (−).

FIGURE 16

FIRST PAGE OF THE DIAGNOSTIC INTERVIEWER'S GUIDE

Source: Used by permission of E. F. Wonderlic.

after the interview. His ratings on these questions are "Good-Excellent" (+) or "Poor-Fair" (—). On the form there are thirty-four such questions, so that an applicant may make a score somewhere between —34 and +34. According to the instructions on the fourth page of the form a negative score or a very low positive score should eliminate the applicant from serious consideration.

The personnel psychologists found that the standardized interview guide procedure could yield a measure of reliability. On a small sample of twenty-three applicants, who happened to be interviewed both locally by the branch manager and also at the central personnel offices of the company, a correlation coefficient of 0.71 was obtained between the total interview guide scores of two interviewers who rated independently.

Again, on a sample of one hundred cases, the personnel psychologists checked the reliability of the several sections of the *Diagnostic Interviewer's Guide*. Reliability coefficients of 0.57 for work history section, 0.46 for personal history, and 0.25 for both social and family history were obtained. It is noted that the family history and the social history sections had extremely low reliability. Neither section could have satisfactory validity with any criterion of success because of its low reliability. While the reliabilities of the subsections of the standardized blank are low by themselves, the total score for the entire blank yielded a reliability coefficient of 0.82. Those who developed and evaluated the form note that this exceeds typical interview reliabilities.

The validity of the total score obtained from the four parts of the standardized blank is rather impressive as interview validities go. Some of the applicants selected by the interview were followed up on the job over a period of time until a number of them had been dismissed. The *Diagnostic Interviewer's Guide* scores for one hundred individuals still on the job and one hundred who had been discharged were studied. It was found that there was a significant difference between the total scores on the *Diagnostic Interviewer's Guide* for those still on the job and for those dismissed.

Hovland and Wonderlic also report another procedure for evaluating the standardized interview. They obtained data on three hundred individuals who had been hired. They were divided into five groups in accordance with their scores on the *Diagnostic Interviewer's Guide*. The employees were then

followed up on the job and split into three groups according to whether they were still on the job, had resigned, or had been dismissed. Table 9 shows the results. It should be noted that few individuals were selected who received a rating score below 10 on the guide. The bottom line of the table shows that

TABLE NINE

PERCENTAGES OF INDIVIDUALS (1) STILL ON JOB, (2) RESIGNED, AND (3) DISMISSED IN VARIOUS CATEGORIES OF SCORES ON D.I.G.

CLASSIFICATION	SCORES ON D.I.G.				
	0–10	12–16	18–22	24–28	30–34
	%	%	%	%	%
On-the-Job	38.9	42.9	47.2	48.6	59.2
Resigned	22.2	25.7	29.2	29.4	34.7
Dismissed	38.9	31.4	23.6	22.0	6.1
Number of Individuals	18	35	89	109	49

Source: Carl Iver Hovland and E. F. Wonderlic, Prediction of industrial success from a standardized interview, *Journal of Applied Psychology, 23:* 1939, 543.

18 individuals were selected whose scores were in the step interval 0–10, 35 between 12 and 16, 89 between 18 and 22, 109 between 24 and 28, whereas 49 individuals were selected in the step interval 30–34. Study of Table 9 will show that the interview guide scores are fairly diagnostic and significantly related to successful tenure on the job.

We may also picture these rather striking results by reference to Figure 17. There is a progressive decrease in the percentage of individuals who are dismissed as the scores increased. About 40 per cent of those with scores between 0 and 10 were dismissed within one year after employment; only about 5 per cent of those with scores between 30 and 34 were dismissed in that period.

Hovland and Wonderlic stressed the need for training interviewers. The guide, as they have developed it, provides such a training procedure. They recommended to the company that a number of typical interviews based on the interview guide blanks be recorded by electrical recording

equipment. These sample interviews were printed and sent out to the branch managers together with instructions and training materials for the use of the guide in conducting the interview.
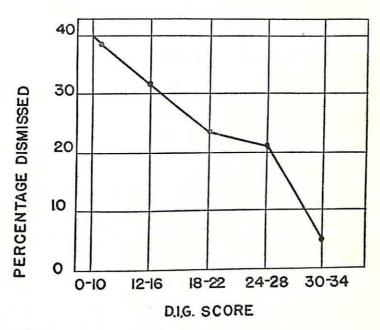
FIGURE 17

PERCENTAGES OF INDIVIDUALS WHO ARE DISMISSED WITHIN A YEAR IN GROUPS HAVING VARIOUS DIAGNOSTIC INTERVIEWER'S GUIDE SCORES AT TIME OF EMPLOYMENT

Source: Carl Iver Hovland and E. F. Wonderlic, Prediction of industrial success from a standardized interview, *Journal of Applied Psychology 23:* 1939, 544.

Another helpful form available for use during the interview is the *Interviewer's Rating Scale,* developed by Lawshe and Satter [9] (see Figure 18). The form has two sections, one for rating the applicant as a person without reference to his qualifications for a specific job; the other for recording an applicant's fitness for two specific jobs, which the interviewer lists.

The rating scales are in the form of a series of descriptive sentences with

[9] Published by Science Research Associates, 57 West Grand Avenue, Chicago 10, Ill.

INTERVIEWER'S RATING SCALE

by
C. H. LAWSHE, Jr., and G. A. SATTER
Division of Education and Applied Psychology
Purdue University

This scale furnishes a convenient means for recording the information obtained during an employment interview with an applicant. On the left side of the scale are six items for rating the applicant as a person without reference to his qualifications for a specific job. On the right side of the scale provision is made for recording the applicant's fitness for two specific jobs, the job titles of which should be entered in the two spaces provided.

HOW TO USE THE SCALE

1. Record your judgment of the applicant on each characteristic by checking one of the boxes provided after the question.

2. In the spaces provided write in the job title (or titles) of the job for which the applicant is applying or for which he is being considered.

3. If the applicant is being considered for more than two payroll jobs, additional blanks may be attached to the original form.

4. If you have reservations in answering the question, "Do you recommend hiring him for this job?" write your specific comments in the space provided under the question.

In rating applicants on each characteristic, it will be to the advantage of the interviewer to keep in mind the fact that people in general are spread over the range from one extreme to the other approximately as follows:

☐ Very poor 10% ☐ Poor 20% ☐ Average 40% ☐ Good 20% ☐ Very Good 10%

In other words, the interviewer when rating 100 random applicants should apportion his ratings about as follows:

Very poor —About 10 persons
Poor —About 20 persons
Average —About 40 persons
Good —About 20 persons
Very good—About 10 persons

Remember that an applicant who is very good on one characteristic may not be equally good on the other characteristics. In fact, very few applicants will be at the same level on all of the characteristics.

FIGURE 18 (PART 1)

INTERVIEWER'S RATING SCALE

Source: Used by permission of C. H. Lawshe and Science Research Associates, Chicago, Illinois. Copyright, 1943.

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How does his appearance impress you?

How well does he talk? Does he express himself clearly and adequately?

How sociable and friendly is he? Does he seem to be a good mixer?

How good is his work record?

How much initiative is indicated by his past jobs and work experience? Has he been a "self-starter"?

How anxious does he seem to be to work for this company?

JOB TITLE _____

How well do you think his experience and training fit this job?

How well informed does he seem to be in this general occupational area?

Do you recommend hiring him for this job?

JOB TITLE _____

How well do you think his experience and training fit this job?

How well informed does he seem to be in this general occupational area?

Do you recommend hiring him for this job?

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FIGURE 18 (PART 2)

boxes which the interviewer checks to indicate his rating of the applicant. For example, one question reads, "How sociable and friendly is he? Does he seem to be a good mixer?" The five descriptions which can be used for rating are: "Unfriendly, unsociable, or bashful"; "somewhat reserved or retiring"; "friendly but not overly expressive"; "friendly and quite expressive"; and "extremely social; treats new acquaintances as if they were old friends." The authors recommend that when rating, the interviewer "keep in mind the fact that people in general are spread over the range from one extreme to the other approximately as follows:

"Very poor, 10%; Poor, 20%; Average, 40%; Good, 20%; Very Good, 10%."

Fear and Jordan have developed an *Employee Evaluation Form for Interviewers* [10] (Figure 19) which has been found to be a timesaving device because it is designed to direct the interview into areas most likely to produce essential information. In a plant where it was tried for five months, the average time per applicant was found to be twenty-two minutes. Going on the principle that what the person has done in the past is the best indication of what he will do in the future, the interviewer rates the applicant on seven factors: previous experience, training, manner and appearance, sociability (teamwork), emotional stability, maturity, and leadership capacity. The interviewer not only rates but also gives the reasons behind each judgment. With the form is a manual for interviewers on its use.

In the *Employee Evaluation Manual for Interviewers*,[11] Fear and Jordan describe how the employment interviewer compares what the applicant is saying about his "old" job with information he has on hand about the "new" job. The employment interviewer tries to obtain specific information, such as the exact duties he performed, the kind of supervision he received, what materials he used, and any special responsibilities he had.

A feature of the manual is its training value for interviewers. In addition to the form for gathering systematic ratings, the interviewer is also provided with a systematic guide for conducting the interview. The table of contents of the manual is itself a "functional index" of the order in which

[10] Available from The Psychological Corporation, 522 Fifth Avenue, New York, N.Y.
[11] Richard A. Fear and Byron Jordan. *Employee evaluation manual for interviewers* (New York: The Psychological Corporation, 1943, 39 pp.).

the interview should be conducted. Its notations correspond to those used on the form for easy reference from one to the other. Thus the interviewer is provided with an easy flow of interview material without undue emphasis at any one point. For example, under the first major area, Work History, the interviewer is concerned with eleven such items:

WORK HISTORY

I. WORK HISTORY ITEMS DEALING WITH PREVIOUS EXPERIENCE
   A. Similar job duties
   B. Required hand and machine tools
   C. Same type materials
   D. Similar working conditions
   E. Same degree of supervision
   F. Shown development on the job

IV. WORK HISTORY ITEMS DEALING WITH SOCIABILITY
   A. Any job experience requiring special teamwork

V. WORK HISTORY ITEMS DEALING WITH EMOTIONAL STABILITY
   A. Friction with former supervisors
   B. Unsound reasons for leaving jobs
   C. Unsatisfactory job stability

VII. WORK HISTORY ITEMS DEALING WITH LEADERSHIP CAPACITY
   A. Ever had leadership experience on the job [12]

Use of systematic ratings such as the ones described above may serve to direct the interviewer's attention to pertinent information so that his judgments may be something better than hunches.

Summary

This chapter has aimed to point out recent approaches to improvements of interviewers' judgments by patterned interview guides and by systematic ratings of the applicant. Patterned interview procedures, used together with their manuals, have several valuable uses: they enable systematic self-

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[12] Part of the table of contents from Fear and Jordan, *op. cit.* Reprinted by permission of the Psychological Corporation.

Copyright 1943
The Psychological Corporation
New York, N. Y.

By Richard A. Fear
Byron Jordan

EMPLOYEE EVALUATION FORM FOR INTERVIEWERS

NAME *Betor, Mary A.*   JOB CONSIDERED FOR *Junior Stenographer - Stenographer*

INTERVIEWER *F.B.R.*   DATE *2/7/43*

INSTRUCTIONS: Rate the adequacy of the applicant's work experience, training, and manner and appearance only as they apply to the job for which he is being considered. For your aid in writing interview summary, mark a check (✔) in box before question items to which answers are favorable and a cross (X) where responses are unfavorable. Mark only those items which have a bearing on the requirements of the particular job in question. Place a check (✔) on each line to indicate your estimate of how well the applicant satisfies the requirements of the factor considered. Note brief facts which substantiate your decision in space below each line.

I PREVIOUS EXPERIENCE

A☐ Similar job duties?
B☐ Required hand and machine tools?
C☐ Same type materials?
D☐ Similar working conditions?
E☐ Same degree of supervision?
F☐ Shown development on the job?

Below Average   Average   Above Average

no work experience

II TRAINING

A☑ Sufficient formal school education?
B☑ Best liked or least liked subjects related to job requirements?
C☑ Required mechanical, mathematical or other specialized training?
D☒ Required "on the job" training?
E☑ Any special training since leaving regular school?

Below Average   ✔Average   Above Average

H. S. grad and six months business college
Best liked subjects - commercial - also least grades in those subjects
Did not want to go to regular college because she did not like many academic subjects

III MANNER AND APPEARANCE

A☑ Favorable, unfavorable mannerisms? (gestures, facial expressions, speech)
B☑ General appearance satisfactory? (features, poise, dress, personal hygiene)
C☑ Evidences of cultural background? (speech, courtesy, interests)
D☑ Voice and speech acceptable?
E☑ Physical qualifications adequate? (height, weight, stamina)
F☑ Any physical disabilities?
G☒ Appear nervous, high-strung?
H☒ Appear aggressive, self-confident?

Below Average   ✔Average   Above Average

Very well dressed, wears expensive clothes, rather attractive, appears to have good taste
Seems a bit timid and ill at ease.

IV SOCIABILITY (TEAMWORK)

A☒ Any job experience requiring special teamwork?
B☒ Participate in school social activities?
C☒ Take part in community affairs?
D☒ Engage in any group recreation?
E☒ Interests reflect liking for people?
F☑ Appear friendly, the kind of person who can get along with others?

✔Below Average   Average   Above Average

Social contacts limited. Little participation in school affairs. Associations restricted to a few close friends.

V EMOTIONAL STABILITY

A☐ Friction with former supervisor? ("chip on shoulder" or "sour grape" attitude)
B☐ Unsound reasons for leaving jobs? (incompetence, quick temper, inflexibility)
C☐ Unsatisfactory job stability? (easily dissatisfied or discouraged)
D☒ Reasons for leaving school? (reaction to failure: frank or defensive)
E☒ Difficult adolescent period? (parents divorced, all work—no play, etc.)
F☒ Lonely, poorly balanced life now? (inadequate social contacts, etc.)

✔Below Average   Average   Above Average

"left business school because I didn't care for the type of girl that went there" Present life lacks proper contact with opposite sex. Mother "believes that there will be plenty of time to have boy friends when I get a little older."

FIGURE 19 (PART 1)

EMPLOYEE EVALUATION FORM FOR INTERVIEWERS

Source: Used by permission of The Psychological Corporation, New York. Copyright, 1943.

VI MATURITY

A☒ Work after school or summers?
(earliest contribution to family income)
B☒ Decisions dominated by family?
(lean on family for moral support)
C☒ Ever lived away from home?
(had to make own way)
D☐ Ever handle more than one job at a time?
(economic drive)
E☒ Good sense of responsibility?
(considered transportation, wages, hours, family in making change of jobs; how much life insurance)
☒ Why did he apply for work here?
(any logical occupational goal)

✓		
Below Average	Average	Above Average

Has had no opportunity to learn what work is really like. Extremely sheltered life. At father's suggestion, applied for work to contribute to war effort. Eventually hopes to work in father's office. Lives 1½ miles from plant - no common carrier. Has not considered how she will get back and forth for work.

Below Average	Average	Above Average

VII LEADERSHIP CAPACITY

A☐ Ever had leadership experience?
(in school, former job, community)
B☐ Does he want to be a leader?
(why)
C☐ Seem like natural leader type?
(dominate or inspire confidence, respect)
D☐ Reasonably aggressive, self-confident and self-sufficient?

INTERVIEW SUMMARY

Though perhaps as well prepared as most girls without experience, she is not yet ready to work under pressure in a stenographic pool — not sufficiently emotionally mature. Inclined to believe that the girl does not want really to work but that her "family has decided she should do something." Because of sheltered life she probably would have considerable difficulty adapting herself to working closely with many of the girls in our stenographic pool.

OVER-ALL RATING FOR SPECIFIC JOB
Considering all the facts you have learned about the applicant, how well is he fitted for this job in comparison with other men already doing this work in the plant?

_____ Above Average
_____ Average
_____ Below Average

TEST RESULTS		
Test	Score	Percentile
Intelligence	74	47
Shorthand	90 wpm	
Typing	45 wpm	(no errors)

FIGURE 19 (PART 2)

training of interviewers; they make for more efficient judgments of what the interviewer observes during the interview; they enable the interviewer to focus his attention on pertinent aspects of the applicant's past history, and above all they enable systematic collecting and recording of trial predictor data, furthering the research development and verification of selection tools in use. The validity of patterned interview guides has been promising in the studies reported. Results with the *Diagnostic Interviewer's Guide* have revealed that the number of satisfactory employees selected increases where predictor scores are above a critical score.

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THE USE OF PERSONAL DATA IN SELECTION

The Value of Item Analysis

The interviewer strives to obtain significant facts about an individual. Some of the language difficulties involved make it an achievement in itself to get facts about an applicant who is highly motivated to get a job. It is also a challenging problem to winnow out the significant from the insignificant facts. A method of item analysis has been discussed. Our interest in this chapter is the design and illustration of further analytical procedures for this purpose.

During the past three decades analysis of the items contained in application blanks has contributed measurably to the systematic appraisal and prediction of the success of applicants. The development and evaluation of this kind of item are somewhat similar to the development and evaluation of psychological test scores. It is important that interviewers train themselves in analytic approaches so that they can gather information of proven validity.

To the personnel research technician-interviewer with this analytic approach, it doesn't make very much difference whether or not the item under consideration has "face validity," that is, whether it *seems* to be related to success. Hypothetically, it might be found that all applicants hired as lathe operators who live over five miles from the plant tend to be successful, and those who live less than five miles tend not to be successful. Such an item could be said not to have face validity. If a personnel research technician-

interviewer chose such an item, to try it out, he would call it a trial nontest predictor for a while. He would consider it a trial nontest predictor until he obtained verification as to whether it did or did not work, i.e., whether it was or was not valid. If he found that the degree of relationship between how far a man lived from the plant and success in the job was consistently high, he would be justified in using this as a predictor item, regardless of its lack of face validity.

Several studies have been selected to illustrate analysis of the role of personal data in success. The method of analyzing data for use in the selection process is described and the results are given. These examples will also familiarize the interviewer with the history of the development of such analytical approaches during the past several decades.

Analysis of the Role of Personal Data in Success: Life Insurance Salesmen

Some thirty years ago a classic study was made of a method of rating the history and achievements of applicants for life insurance sales positions.[1] The method as evolved for Phoenix Mutual Life Insurance Company of Hartford, Connecticut, extended over a rather long period of data collection and analysis. The company devoted a great deal of effort to building up an organization that would function as effectively as possible. It felt at that time that the results achieved by the development of new methods of selecting and training salesmen were revolutionary. For example, in 1912 under the old plan, the company employed 1,700 salesmen. During that year these salesmen sold $20,500,000 worth of insurance. In 1923, under the new plan, the sales force had been reduced to 375 but the amount of insurance sold had been increased to more than $52,000,000. In other words, a sales force less than a fourth as large as the old one sold two and a half times as much insurance.

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[1] A method of rating the history and achievement of applicants for positions, *Public Personnel Studies*, 3: 1925, 202–211. The article was apparently prepared by the editors of *Public Personnel Studies* through the courtesy of the offices of the Phoenix Mutual Life Insurance Company. Credit is given to Winslow Russell, Vice President and Agency Manager, and Gertrude V. Cope, Manager of the Sales Research Division. The latter "originated and developed the method here presented."

The company attributed much of this increase in effectiveness to two factors: improvement in methods of selection of salesmen, and improvement in methods of training. The improvement came about in this way. In 1912, 10 per cent of the salesmen were selling 90 per cent of the insurance and most of the new men who were employed soon left the company. By 1919, although the system had been improved, it was far from the stage of development of 1923. Out of each 100 salesmen hired, 56 failed to last out the first year. In 1921 and 1922, when the new plan was operating fairly well, only 42 out of each 100 salesmen employed failed to remain a year. "In the last two and one half years this figure has been further reduced to 30 out of each 100. This reduced turnover means a good deal in operating costs as well as in sales, since it costs the company between $50,000 and $100,000 to select and train 100 salesmen." The authors of the report further state that "it would be a mistake, of course, to attribute all the results outlined above to improvements in methods of selection. As a matter of fact, several factors have contributed to this end. Nevertheless, the selective processes . . . have been a very important factor in bringing about these remarkable results." [2]

How did the company succeed so well in selecting its salesmen? The plan is interesting, particularly since it is one of the earliest studies of this kind reported in the literature. In developing the plan over a ten-year period, the Phoenix Mutual Life Insurance Company first analyzed the job of insurance salesmen. Investigators wrote summaries of the job duties and indicated the minimum specifications or qualifications judged to be necessary for the successful performance of the duties. They rightly looked upon job analysis as the foundation for any scientific attack on the several personnel problems that confronted them.

Emphasis was placed upon more systematic ways of gathering information about applicants. They attempted to make the interview more specific and definite by having the local branch manager report his interviews on a prepared form. They also prepared a blank on which the applicants gave certain facts about their personal history. They obtained credit ratings and confidential reports on applicants. They gathered additional information

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[2] A method of rating the history and achievements of applicants for positions, *loc. cit.*, p. 203.

by mailing out to previous employers a form especially developed for the purpose. This procedure was installed and information began to accumulate. After a few years had elapsed, an analysis was made of the sales performance and history of achievements of five hundred salesmen selected in 1919, 1920, and 1921. It was possible, then, to identify which of the five hundred salesmen were successful and which were unsuccessful as judged by company standards.

AGE	FAILURES	SUCCESSES
23 AND UNDER	51%	49%
24-32	42%	58%
33-38	36%	64%
39-44	47%	53%
45 AND OVER	50%	50%

$(N = 500)$
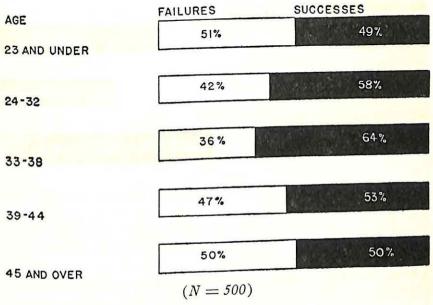
FIGURE 20

THE RELATIONSHIP OF AGE TO SUCCESS OF LIFE INSURANCE SALESMEN

Source: A method of rating the history and achievements of applicants for positions, *Public Personnel Studies, 3:* 1925, 204.

The next step was the statistical treatment and systematic analysis of twelve personal data items or nontest trial predictors to see which ones were most efficient in forecasting successful salesmen: (1) age, (2) number of dependents, (3) marital status, (4) number of years of schooling, (5) number of years since leaving school, (6) selling experience—life insurance, (7)

selling experience—other outside selling, (8) number of memberships in social organizations, (9) number of offices held in social organizations, (10) homeownership, (11) number of investments, and (12) life insurance carried.

Each of the twelve nontest predictors was studied for its relationship to the prediction of successful salesmen. For example, from analysis of records of the five hundred salesmen, the results for "age" are shown in
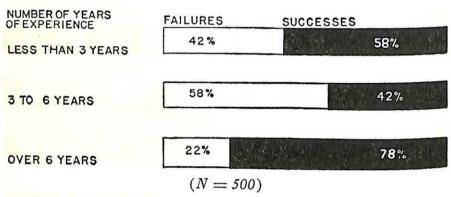
FIGURE 21

THE RELATIONSHIP OF OTHER OUTSIDE SELLING EXPERIENCE, NOT INCLUDING RETAIL SELLING, TO SUCCESS OF LIFE INSURANCE SALESMEN

Source: A method of rating the history and achievements of applicants for positions, *Public Personnel Studies, 3:* 1925, 207.

Figure 20. The percentage of failures and successes for each age range was tabulated. It can be seen that chances of selecting a successful salesman are greatest when the applicant is between thirty-three and thirty-eight years old. Salesmen who are young when hired do not tend to achieve success as often as do the older salesmen.

Similarly, in Figure 21 [3] we find that other outside selling experience seems to have a relationship to success as does the number of investments (Figure 22).

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[3] The report is not clear whether the same five hundred cases were utilized throughout for the remaining eleven variables, but this seems to be likely.

It should be noted that some of the trial nontest predictors do not seem to differentiate between failures and successes. One of these is whether a person rents, boards, or owns his home—although a slight edge is given for owning one's own home. It is noted that in this study no statistical measure or index of the significance of the differences was used.
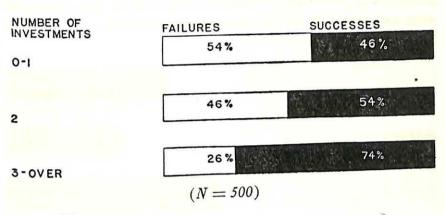
FIGURE 22

THE RELATIONSHIP OF NUMBER OF INVESTMENTS TO SUCCESS OF LIFE INSURANCE SALESMEN

Source: A method of rating the history and achievements of applicants for positions, *Public Personnel Studies, 3:* 1925, 208.

After preliminary analysis of the trial predictor items, the next problem the research workers undertook was to combine the various trial predictors into a composite score. Each of the twelve items could be quantified and coded by giving the individual a score or weight in terms of his chances of success as indicated by the horizontal per cent method described in a previous chapter. For example, from Figure 20 it can be seen that if his age is twenty-eight, he falls in the group with a proportion of 58 per cent good employees, so his score on this item is 58. Each of the twelve items was scored in this manner; a weighted composite score for each individual was the total of the twelve individual scores. This is a very simple method of obtaining a composite score.

It is noted that even the variables which did not appear to show a

significant difference were utilized to obtain the composite score. It should also be noted that some items weight themselves more heavily than others, depending upon their intercorrelation. We should expect, for example, that the number of dependents would be highly related to age. Certainly the number of dependents ought to be related to marital status. Thus those items that are interdependent would tend to get a higher actual weight. In the composite score described above this effect was not taken into account by the personnel technicians at that time.

	Scores 579–640	Scores 641–670	Scores 671–732
Successes		S S S S S S S S S S S S S S S S S S S S S S 24	S S S S S S S S S S S S S S S S S S S S S S S S S S S S S S S S S S S S S S S S S S S S S S S S S S S S S S S S S S S S S S S S S S S S S S S S S S S 76
Failures	F F F F F F F F F F F F F F F F F F F F F F F F F F F F F F F 31	F F F F F F F F F F F F F F F F F F F F F F F F F F F F F F F F F F F F F F F F F F 42	F F F F F F F F F F F F F F F F F F F F F F F F F F 27

FIGURE 23

THE RELATIONSHIP OF COMPOSITE SCORES MADE BY 100 LIFE IN-
SURANCE SALESMEN WHO WERE SUCCESSES AND 100 LIFE INSUR-
ANCE SALESMEN WHO WERE FAILURES

Source: A method of rating the history and achievements of applicants for positions, *Public Personnel Studies, 3:* 1925, 209.

We may now turn to interpretation of the results of their composite scores. Figure 23 summarizes the composite scores made by 100 successful and 100 unsuccessful salesmen selected in 1920. None of those who made

a composite score of 640 or less was successful on the job. In the middle band of scores, ranging from 641 to 670, only 24 of the men were successes while forty-two were failures. Of those salesmen with scores above 671, 76 were successes and 27 failures.

From the data reported in this study, we have computed the correlation coefficients between success on the job and the weighted composite scores, to determine which cut-off point, 641 or 671, would have been better. In this instance, if 641 had been used, no successful salesmen would have been rejected at hiring although 69 later failures would have been hired; this correlation coefficient was 0.43.[4] If a higher score, 671 was used as a cut-off point, 24 successful salesmen would have been rejected but 73 failures would also have been rejected. This correlation coefficient was 0.46.[4] It would seem that the latter score would have been preferable in this situation.

Analysis of the Role of Personal Data in Success: Office Equipment Salesmen [5]

As part of a long-range personnel research program the Burroughs Corporation foresaw the need for improved personnel techniques and analyt-

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[4] These correlation coefficients are called "fourfold r's." The general formula is
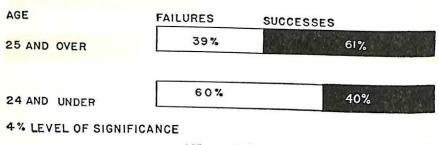
$$r = \frac{bc - ad}{\sqrt{(a+b)\ (c+d)\ (a+c)\ (b+d)}}$$

In the case of a 641 cut-off score:

Successes	0 (a)	100 (b)
Failures	31 (c)	69 (d)

$r = 0.43$

579–640 641–732
Scores

In the case of a 671 cut-off score:

Successes	24 (a)	76 (b)
Failures	73 (c)	27 (d)

$r = 0.46$

579–670 671–732
Scores

[5] In this section unpublished studies by Roger M. Bellows and colleagues are reported.

ical approaches to the evaluation of applicants in the early 1920's, about the same time that the Phoenix Mutual Life Insurance Company was performing the studies summarized above. The program of personnel research now in progress at Burroughs includes selection problems concerning several categories of personnel within the marketing activity.[6] The selection of personnel has been performed with great care. As a result of this continuing program, the amount of turnover has been kept exceedingly low compared with the average of companies in general.

AGE   FAILURES   SUCCESSES

25 AND OVER	39%	61%

24 AND UNDER	60%	40%

4% LEVEL OF SIGNIFICANCE

$$(N = 102)$$

FIGURE 24

THE RELATIONSHIP OF AGE TO SUCCESS OF OFFICE EQUIPMENT SALESMEN

Source: An unpublished study by Roger M. Bellows and colleagues.

The present report describes a study of the usefulness of nontest trial predictors from the application blank and other records for selection purposes. The group being studied includes 52 successful salesmen and 50 salesmen who were separated from the company because of ineffectiveness as salesmen of the office equipment products of the company. All of the salesmen had been part of a larger sample of 352 salesmen trainees selected during 1947 as replacements after World War II to meet the needs of the company's expanding program.

Personal data about the salesmen were gathered from records and from application blanks, comparable to the trial nontest predictors described above in the life insurance study. The trial variables were age, interviewer's

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[6] This system has been developed over a period of years by Paul G. Kanold, H. W. McIntyre, Robert B. Lapham, and, more recently, by D. E. Clifton.

estimate of success, marital status, former employers' ratings, number of dependents, office experience, part-time employment, supervisory experience, number of accounting courses completed in college, and extracurricular activities while in college. The relationships between some of these trial variables and the criterion are shown in Figures 24 to 27.

INTERVIEWER'S
ESTIMATE   FAILURES   SUCCESSES

EXCELLENT   29%   71%

LESS THAN   54%   46%
EXCELLENT

5% LEVEL OF SIGNIFICANCE

$$(N = 102)$$
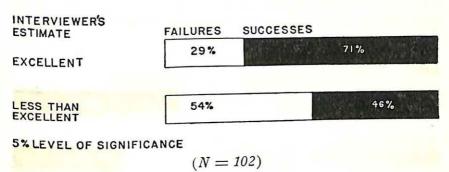
FIGURE 25

THE RELATIONSHIP OF INTERVIEWER'S ESTIMATE TO SUCCESS OF OFFICE EQUIPMENT SALESMEN

Source: An unpublished study by Roger M. Bellows and colleagues.

They are presented in the same form as Figures 20, 21, and 22 for the Phoenix Mutual Life Insurance so that they may be compared.

The figures have been arranged approximately in order of their significance. Age was the most significant nontest trial predictor.[7] The significance of this item is described by an index indicating whether or not there is a strong likelihood that the differences in the ages of the salesmen in the two categories, success and failure, are true differences, not just a chance occurrence which happened this one time. The index is determined by a formula which tells how much the proportion of people in each category departs from the proportion one would expect to find there just from chance alone. The smaller this index, the surer one could be that the number of people in each category would occur in about the same ratio if the experiment were repeated. This item was significant at the 4 per cent level of confidence.

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[7] The coefficient of correlation between age and success in the company was 0.21. Footnote 4, above, shows how a fourfold correlation coefficient is computed.

This means that if we could repeat the study many times, we would expect about this same order of differences in 96 out of 100 similar samples from this company, that men 25 and above are more likely to be successful than men 24 and under at the same time of hiring.

The next two most significant items were marital status and interviewer's estimate of success. They were significant at the 5 per cent level.[8] There was a tendency for the married man or engaged man to be more successful than the single man in the job of office equipment salesman. The other

MARITAL STATUS

	FAILURES	SUCCESSES
MARRIED OR ENGAGED	42%	58%
SINGLE	62%	38%

5% LEVEL OF SIGNIFICANCE

$$(N = 102)$$

FIGURE 26

THE RELATIONSHIP OF MARITAL STATUS TO SUCCESS OF OFFICE EQUIPMENT SALESMEN

Source: An unpublished study by Roger M. Bellows and colleagues.

variable, interviewer's estimate of success, was a rating performed at the time of hiring. It has been the company's policy for several decades to provide carefully prepared rating blanks for branch managers to use after the interview. The branch manager sends in his estimate of the predicted future success of the individual. The applicant's potential success is rated either superior, good, average, below average, or unsatisfactory. This rating goes to the central personnel selection authority in the marketing activity, for decision and authorization for selection of the new hire. In this study, the interviewers' estimates were picked up from the records and correlated with the success of these groups studied in the manner shown. There was a low

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[8] The fourfold coefficient of correlation between the interviewer's estimate and the criterion was 0.21; between marital status and the criterion, 0.20.

but significant tendency for applicants rated superior to be more successful than those who received a lower rating.

The fourth variable which was at or near an acceptable level of significance (6 per cent) was the former employers' estimate.[9] Former employers' ratings were obtained by mailing out the rating forms before hiring the applicant. There was always more than one former employer who rated the individual, so the data were grouped into two categories: mostly superior ratings and less than mostly superior ratings. There was a tendency for the

RATINGS

	FAILURES	SUCCESSES
MOSTLY SUPERIOR	33%	67%
LESS THAN SUPERIOR	52%	48%

6% LEVEL OF SIGNIFICANCE

$$(N = 100)$$

FIGURE 27

THE RELATIONSHIP OF FORMER EMPLOYERS' RATINGS TO SUCCESS OF OFFICE EQUIPMENT SALESMEN

Source: An unpublished study by Roger M. Bellows and colleagues.

applicants with mostly superior ratings to be more successful than the ones with lower ratings.

It is interesting that the number of accounting courses taken in college by the sales trainees did not appear to be related to success. The company had a policy of hiring college graduates with a considerable amount of accounting training, believing that accounting courses should contribute to the usefulness of their sales representatives since these men, after experience and maturity, became, as part of their duties, office management consultants for customers and clients of the firm. Additional evidence, however, indicated that the number of accounting courses may have been actually negatively related to success after several years on the job, that is, the more accounting

[9] The fourfold coefficient of correlation between the former employers' estimate and the criterion was 0.15.

courses the applicant had, the less chance he had for a high degree of success in the company.

It would not be worth while to utilize the other variables—the number of dependents, office experience, and so on—because there is little chance that these items are valid enough or stable enough to warrant their use. However, the first four items which significantly differentiated between the successful and unsuccessful salesmen probably can be used with profit if found valid on successive samples.

Horizontal percentage weights were obtained for each category on these four nontest trial predictors in the same way as they were obtained for the Phoenix Mutual Life Insurance Company. Figure 28 shows how two illustrative employees differed on these four variables. Employee 71 was unsuccessful and a salesman who was with the company only a short while (a "short-termer"); Employee 122 was successful and is still with the company.

The four variables were scored for the sample of 48 short-term salesmen and 52 successful long-termers. The horizontal percentage weights for the four variables were added to form a weighted composite score for each person. The relation between these composite scores to the tenure-success criterion is shown in Figure 29 ($r = 0.27$). If 189 is used as a cut-off score, one fourth of the 48 failures or short-termers would have been rejected at the hiring point although 3 successful long-termers would also have been rejected.

It should be called to the attention of the reader that the degree of significance of the data contained in these four variables has been superimposed upon a careful selection system. That is to say, we are dealing —even in the case of the "unsuccessful" office equipment salesmen—with a highly selected group. Undesirable applicants were rejected in the selection process. For our study, in the case of the "unsuccessful" group we are experimenting with the lower portion of this highly selected group. This fact, as has been pointed out previously, causes any obtained index of significance, or estimate of association between predictor variables and criteria of success, to be low. If we had been using the total population in the experimental sample, unselected by the devices previously used, much higher estimates of correlation would almost certainly have been obtained.

EMPLOYEE NO. 71 (Short-termer)			EMPLOYEE NO. 122 (Long-termer)		
Item	Data	Weight	Item	Data	Weight
Age	23	40	Age	27	61
Marital status	Single	38	Marital status	Married or engaged	58
Interviewer's estimate	3.0 (Good)	46	Interviewer's estimate	4.0 (Superior)	71
Former employer's rating	1 (Mostly good)	48	Former employer's rating	3 (Mostly superior)	67
Composite score [a]		172	Composite score [a]		257

[a] Derivation of Composite Score

Personal Data Item	Weight
Age	
24 and under	40
25 and over	61
Marital status	
Married or engaged	58
Single	38
Interviewer's estimate	
Score 5.0	71
Score 3.5 and below	46
Former Employer's Rating	
Score 3	67
Score 2 and below	48

FIGURE 28

COMPARISON OF FOUR PERSONAL DATA ITEMS FOR A SHORT-TERMER AND A LONG-TERMER

Source: An unpublished study by Roger M. Bellows, M. Frances Estep, and Carl H. Rush, Jr.

In the same program of developing and evaluating by statistical analysis techniques for the selection of sales trainees a number of criteria are utilized. These criteria consist of ratings by supervisors for the following items: technical knowledge, learning ability, interest in work, planning of work, sales approach, demonstration of the product, and closing ability. In addition to these subjective ratings, the supervisors were asked to rate subjects on present over-all value to the company and also on potential over-all value. A composite of these ratings was obtained to form one criterion. A

	170–179	180–189	190–199	200–209	210–219	220–229	230–239	240–249	250–259	260–269
Long-termers	3	0	16	1	13	3	0	13	0	3
Short-termers	12	0	17	1	10	2	0	6	0	0

Weighted Composite Scores

By using 189 as the cut-off score, r = 0.27
By using 199 as the cut-off score, r = 0.24

(*N = 48 short-termers*)
(*N = 52 long-termers*)

FIGURE 29

RELATION OF WEIGHTED COMPOSITE SCORES TO TURNOVER

Source: An unpublished study by Roger M. Bellows, M. Frances Estep, and Carl H. Rush, Jr.

second type of criterion data gathered was an estimate of performance gleaned from objective records. Several indexes were included: average number of sales for a unit of time; the percentage of quota achieved; average monthly sales volume; and a composite objective criterion developed by factor analysis. The ten items of subjective criteria that were gathered did not have very high statistical reliability in themselves. None of the personal data items (age, marital status, and the like) proved to have a statistically significant degree of validity in predicting them.

It should again be noted that we were dealing with an extremely homogeneous group, all college graduates, all highly selected on the basis of these items. However, it was found that one item concerned with previous

experience of the applicant correlated 0.30 with the composite of the four objective criteria cited above.[10] This is statistically significant at the 5 per cent level. It was also found that the number of accounting courses correlated negatively with each one of the four objective criteria. These correlations range from —0.23 to —0.34. It was found that for the composite objective criterion, the number of accounting courses correlated —0.34. One hundred cases were drawn from the 352 cases of the original sample for the purpose of this portion of the study. These are the 100 cases that had been in the firm for the longest period of time (none less than two years) and on whom the greatest number of trial criteria, trial nontest predictors, and test information (not reported here) were available.

Analysis of the Role of Personal Data in Success: Use of Older Women

In the Harwood Manufacturing Company an industrial psychologist was attempting to change the false stereotype existing in the company against the use of older women for production work. He met resistance on every side when he furnished arguments for their employment. It was said that the older women could not maintain speed in production; they had a shorter working life. They were frequently absent; they were almost impossible to teach. When he pointed out the high production records of some women over 30 they were regarded as exceptions.

A comparison of the company's 700 employees was made on the four criteria which the members of top management judged to be indicative of the value of a worker to the company: production per hour, speed of learning a new skill, days lost through illness, and rate of turnover. In all four criteria, the group of women over 30 equaled or surpassed the younger ones; for example, the older women were equal to or surpassed the younger women in production. With 100 per cent the standard production for skilled workers, the average production level of workers above 30 was 112 per cent (the level of the 31 to 35 group was 111 per cent; those over 35, 113 per cent); whereas the 16 to 20 group was found to be 95 per cent of standard; the 21 to 25 group, 93 per cent. In regard to rate of learning, it was found that

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[10] All of the correlation coefficients reported in this paragraph were computed by the Pearson product-moment method.

after ninety-six hours of training the younger groups had reached the level of about 40 per cent, whereas the groups above 30 years of age reached 50 per cent of standard. Comparing the attendance, an average absenteeism of 7.62 per cent was found for the 31 to 35 group and 8.35 per cent for the group over 35, as compared with 13.36 per cent in the 16 to 20 age group and 9.51 per cent in the 21 to 25 group. The percentage of annual employee turnover for the 31 to 35 age group was 29.3 per cent, and for the groups of 36 and above, 18.9 per cent. Percentages for the 16 to 20 age group were 64.2 per cent, and for the 21 to 25 group, 37 per cent.[11]

In this particular company the stereotype was operating against the cost efficiency of the company. Simple analysis of the relation of age to such criteria as these used here helped demonstrate to the management of the company its own fallacious hiring specifications, and enabled interviewers to utilize age and other nontest predictors, when found to be significant items in selection, with increased economy, efficiency, and worker satisfaction.

Analysis of the Role of Personal Data in Success: Earnings of Cab Driver-Salesmen

Viteles conducted a study in the Yellow Cab Company of Philadelphia on variables related to commissions and gross earnings of the drivers.[12] Neither a mental alertness test nor a test to measure "accident susceptibility" showed a high enough validity coefficient to warrant recommendation of use in selection.

He next turned to analysis of application blank items. He used these trial predictors: age, nationality, marital status, number of children, number of other dependents, trade followed prior to employment by the Yellow Cab Company, and weight. Through combining these predictors with appropriate weights he derived composite scores on the application forms for differentiating a group of the highest earners from a group of the lowest earners. If the company had used the obtained critical score on the application form when

[11] Alfred J. Marrow and John R. P. French, Jr. Changing a stereotype in industry, *Personnel* (American Management Association), *22:* 1946, 305–308.

[12] Morris S. Viteles, *Industrial psychology* (New York: W. W. Norton & Company, Inc., 1932), pp. 182–185.
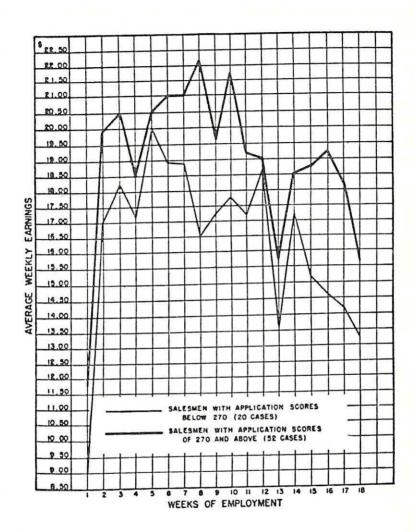
FIGURE 30

DIFFERENCES IN THE EARNING ABILITY OF CAB DRIVER-SALESMEN

Source: Reprinted from *Industrial psychology* by Morris S. Viteles. By permission of W. W. Norton & Company, Inc. Copyright 1932, by W. W. Norton & Company, Inc., p. 184.

considering these men as applicants, it would have rejected 60 per cent of the poorest earners, 18 per cent of the average earners, and 22 per cent of the best earners. In Figure 30 the differences in average weekly earnings are shown for twenty cab drivers whose application blank scores were below the cut-off point and fifty-two whose scores were above. The general shape of the two curves shows the higher average weekly earnings of the group with application blank scores above the critical score.

Summary

Analysis of nontest trial predictor items often yields more precise tools for selection. A vast difference exists between clinical use of items and use of items of proven validity. The present methods for item analysis have been developed during the past three decades. They have been helpful, for example, in the selection of life insurance salesmen. For selection of office equipment salesmen it has been demonstrated that item analysis procedures can sharpen selection even among an extremely highly selected group. These procedures can be used to show how hiring policy can be changed to result in higher production and lower turnover of employees.

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Chapter | **ELEVEN**

TRADE TESTS AS RELATED INTERVIEW AIDS

Introduction

Personnel researchers have sought to improve their decisions in the selection and placement of workers by adding testing procedures to the interview. Some of the most successful of these procedures are *trade tests*, particularly oral trade tests. They may be woven into the fabric of the interview.

Trade tests and job proficiency measurements tap into specific knowledge and skill learned in a more or less systematic and formal way. It would be well at the outset to distinguish between measures of job knowledge and measures of job aptitude. Aptitude tests are designed to measure knowledge which has been acquired incidentally and not by formal or systematic training in specific subject matter areas. Aptitude testing is thus more appropriate when it is important to find out an applicant's potentialities for learning—the amount of job knowledge and training he can be expected to acquire in a given time. Trade testing, the measurement of specific trade knowledge and skill, is more pertinent when it is important to determine what the applicant already has achieved in these specifics. Specific trade knowledge should enable him to perform at once on the job or to go into more advanced training based on the specifics of knowledge and skill that he has already acquired.

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The Need for Trade Tests

Trade testing began as a result of the difficulties encountered in classifying men during World War I. Emphasis early in the war was on ways of placing, rather than selecting, personnel. It was recognized as urgent during 1917 that the Army develop methods to determine where the knowledge and skill of each of its men could be most effectively used. Many men had, or claimed to have, specialties. Several hundred fairly definite Army occupations were known at that time. To train the available men for work different from their civilian occupations was entirely too expensive and would have taken too long. Obviously, tremendous waste and fatal delays would be involved when men were not placed in the Army occupations for which they were best suited.

At first men were simply interviewed and asked about their job experience. This information was entered by making a check mark on the soldier's qualification card. The number of years the man said he had followed his particular vocation was recorded. These data on the qualification card were highly invalid. For one thing, a large number of bluffers were encountered. Some of the men who bluffed their way into special Army jobs were simply continuing a practice they had followed in industry. Some who had had no significant trade experience claimed to be experts; others tended to overestimate or underestimate their ability. In industry it is sometimes possible for the interviewer to be skilled in the trade specialty for which an applicant is being considered. In the Army situation, however, it was not feasible to find such interviewers. Even in industry it is difficult to bring a highly skilled man, for example, a turret-lathe operator, to the employment office to interview one or two applicants in order to determine how much each knows about a turret lathe. The worker loses time and the company loses profit.

The use of a probationary or try-out period is the traditional way of evaluating a new man and observing his skill on the job. This, of course, may be expensive. Studies have shown that the cost of a probationary period may range from a minimum of fifty dollars up to several thousand dollars if the employee must go through a rather long period of training before he begins to produce for the company. The improvement of selection devices, including oral trade tests and other measures of job proficiency, is an en-

deavor to minimize the burden of turnover costs for employees who are dropped during the probationary period.

It is thus desirable to develop, if possible, methods for the interviewer to use in detecting gross degrees of skill and knowledge. His referrals can then be at least partially accurate. Several requirements must be met if trade tests are to be useful: the tests must be such that they can be employed by an intelligent examiner who has no specialization or personal knowledge of the trade; they must yield an objective score; and, in most cases, they must not require the use of tools or apparatus.[1]

Kinds of Trade Tests

There are four kinds of trade tests—performance, written, picture, and oral.

PERFORMANCE TRADE TESTS

The performance trade test is perhaps one of the oldest kinds of testing procedures in existence. The procedure varies from a highly informal probationary procedure to fairly objective, systematic measurements. In the most informal situation the interviewer says to the applicant, "Well, you say you can do the job. Let's find out. Go down to Work Area 32, Plant No. 1, and see a foreman by the name of Joe Brosinski. He'll put you through your paces." The applicant then goes down and spends several hours talking with Foreman Brosinski. The foreman asks questions about the machine, perhaps on nomenclature and tool usage. If he is satisfied that the applicant has seen the machine before, he asks him to turn out a job on it. The foreman then rates the applicant on how well he likes him and will either hire him or not hire him as he sees fit. This is an informal, unsystematic, and highly unsatisfactory practice.

At the other end of the scale, performance trade testing may be done by carefully developed and manualized procedures. The applicant is asked to try to turn out a standard piece or to perform a standard task. For ex-

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[1] J. Crosby Chapman, *Trade tests* (New York: Henry Holt & Company, Inc., 1921), p. 8.

ample, the interviewer's manual might indicate the materials needed to test a machinist:

> *Equipment and space needed*—a Machinist's Bench Vise; 4-inch jaw, to weigh not less than 40 pounds; four feet of bench space.
> *Material*—the applicant is to be provided with one piece of cold rolled steel, $\frac{1}{8} \times 1 \times 3\frac{3}{4}$ inches.
> *Tools*—A Miller Falls adjustable hack saw frame; 3 8-inch Star hack saw blades; 1 8-inch flat file, No. 00 cut; 1 8-inch flat file, No. 0 cut; 2 Wooden File Handles; and 1 9-inch Starrett combination square.[2]

The manual would include instructions to the examiner such as the following:

1. Make certain that the test equipment is complete and ready for the test.
2. Record the time required by the candidate to do the work. Do not include the time spent in giving preliminary instructions.
3. Use Plate 6-g, No. 2, to identify the parts and measurements referred to . . . . Do not permit the candidate to see this plate.
4. Hand the candidate the blue-print 6-g, No. 1.
   To the candidate say, "Look at the instructions on this blue-print while I read them."

The candidate would then be asked if there were any questions. The directions would be repeated and then the examiner would say: "Go ahead and make a good fit any way." [3]

The manual would also include rigid instructions for scoring the individual's fit, although the scoring may be somewhat subjective. Measurements and tolerances, as well as the over-all fit and goodness of the part, are rated at the conclusion of the proficiency test, based on points earned for the quality of the part turned out. In more formal procedures, norms are developed and the candidate is graded as finely and as accurately as the test conditions and the subjective nature of the scoring procedure permit.

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[2] *Ibid.*, p. 301.
[3] *Ibid.*, pp. 301–304.

Such testing required a considerable amount of developmental work for its standardization. The particular situation must be surveyed to determine whether it is feasible or profitable to develop this type of test. Work must be done not only on the verification of the test for the selection of good employees but also on the follow-up on the validity of the test scores. During the developmental phase much revision in the manual of procedures is required and a considerable amount of statistical analysis and calibration of the test is necessary.

The performance type of test has been found to be somewhat expensive and difficult to administer. It takes a great deal of time and requires the services of an examiner who is expert in the subject matter involved in the test. These are obvious disadvantages. Unless the volume of applicants and the number of hires, together with the importance of the job, is sufficient to justify it, the company may want to use simpler, less expensive devices. Performance tests should be used only when a measure of skill is required and when the skill measure does not correlate highly with knowledge and information. For most trades, the relationship between the knowledge and skill possessed by an applicant is higher than is generally supposed. If skill and knowledge are highly correlated, then the rule would be to measure knowledge since knowledge can be readily measured by the use of written, picture, or oral types of trade tests.

WRITTEN TRADE TESTS

Written trade tests have an advantage in that they can be administered to several applicants at the same time. Although they are quite expensive to develop and validate, they are objective; moreover, they can be administered more economically than individual trade tests. They can be given in a group. Hence they reduce administration and test-scoring time and increase scoring accuracy through the use of stencils and objective scoring methods. Not only do they eliminate subjective judgments; they may make it possible to eliminate the trade bluffer and leave only those who show evidence of enough trade knowledge to be considered for comprehensive interviewing and selection procedures. Thus the written trade tests can sometimes be used with profit as a preliminary hurdle in the selection process.

PICTURE 6

6. Q. What do you call that?
   A. Center bit.

PICTURE 7

7. Q. What do you call that?
   A. Bevel gauge ("fence").

PICTURE 8

8. Q. What do you call that?
   A. Scraper.

PICTURE 9

9. Q. What do you call that?
   A. Saw set.

PICTURE 10
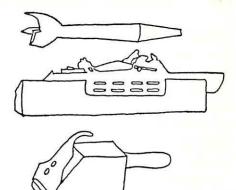
10. Q. What kind of chisel is that?
    A. Mortise (frame).

PICTURE 11
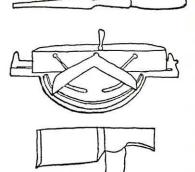
11. Q. What do you call that?
    A. Mitre.

PICTURE 12

12. Q. What kind of hatchet is that?
    A. Lathe (shingle).

FIGURE 31

AN EXAMPLE OF A PICTURE TRADE TEST FOR CARPENTER

Source: J. Crosby Chapman. *Trade tests* (New York: Henry Holt & Company, Inc., 1921), p. 199.

PICTURE TRADE TESTS

The procedure for giving picture trade tests involves presenting the test material visually to the applicant. One example taken from an early trade test for a carpenter is reproduced in Figure 31.[4] The picture type of trade test tends to have face validity—it seems nearer to the trade of the man, and nearer to the conditions under which the trade is performed. It is desirable that when the applicant leaves the interview situation he has the feeling that the test has been fairly given and that his proficiency is known to the organization testing him. It is possible that the picture trade test tends to establish this rapport with the man somewhat better than do oral trade tests. Also, differences in language ability among applicants (that is in itself not necessarily related to success on the job) tend to be equalized by use of the picture trade test.

ORAL TRADE TESTS

Questions asked orally by the interviewer are the most economical type of trade test. They add only seven to twenty minutes to the interview; yet they can provide a valuable rough screening of applicants on the basis of trade knowledge.

Examples of the oral type of trade test question are the following for auto mechanic:

What happens to the braker points if the condenser is bad?
Answer: Burn (pit) (foul) (corrode).

What two metals are cam-shaft bearings *usually* made of?
Answer: a. Bronze (brass)
b. Babbitt (white metal).

Other examples may be given for the trade of bricklayer:

What is half of a brick called?
Answer: Bat.

What is a brick called when set on end?
Answer: Soldier.[5]

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[4] *Ibid.,* p. 199.
[5] *Ibid.,* p. 109.

Oral trade questions were developed and rather rigidly evaluated as one part of the activities of the Occupational Research Program in the United States Employment Service beginning in 1934.[6] In this program, the trade questions were formulated for the most part by job analysts as they were analyzing jobs. The analysts determined processes, methods, tools, and materials for each job that could be useful in the formulation of oral trade questions. After the questions were written by the job analysts, they were discussed or gone over with the foreman, an expert, or a skilled worker on the job who criticized and helped in the process of editing the questions.

Several principles have been found useful in preparing and editing oral trade questions:

1. The wording of the question must be simple and in the language of the worker.
2. The question must deal with an important element of the job.
3. The question must give promise of eliciting a short, specific answer.
4. The question must be such that it cannot be answered by "yes" or "no."
5. The question must contain no catch.
6. The question must give promise of discriminating expert tradesmen from apprentices, helpers, and workers in related occupations.[7]

After the questions were set up and reviewed for length, spelling, and consistency, a preliminary verification was made through trial runs on skilled workers. Correct answers were established and the wording of the questions was smoothed out.

The questions were then given to samples of three groups of workers with varying amounts of proficiency in the trade. The purpose of this step was to provide a means for validating the questions. Group A was comprised of recognized experts in the occupation. In Group B were beginners, apprentices, and helpers. Group C represented workers in closely related oc-

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[6] William H. Stead, Carroll L. Shartle, and Associates, *Occupational counseling techniques* (New York: American Book Company, 1940), pp. 30–48.
[7] *Oral Trade Questions Manual* (CT–O55z,M; Washington, D.C.: War Department, The Adjutant General's Office, 1944), p. 13.

cupations. The experts were considered by their supervisors to be highly skilled. There was a rigid requirement that the expert must have had a minimum experience, e.g., four years' full-time paid experience as an expert in the occupation. The beginners might have from one to three years of experience (depending upon the occupation). They are generally considered as apprentices or helpers and were not thought of by their supervisors to be highly skilled. The Group C workers had been working in the immediate environment of the skilled workers in the occupation under consideration but had not directly participated in it. For example, if the occupation being verified was bricklayer, a hod carrier would be considered as a related worker. If the occupation under consideration was plasterer, a lather might be considered to be related.

The next step in verification of the questions was the statistical analysis of the data. Analysis of the questions showed which ones were good and could be retained and which ones were to be thrown out. The final step of the analysis was to determine the relationship between the test scores and the skill level of the workers in the trade. The method [8] for determining critical points in the distribution of scores on trade-question forms has been found useful to determine those scores that best differentiate the performance of expert workers, apprentices and helpers, and related workers on trade-question forms. When such critical points have been determined for scores on a particular set of trade questions, they may be used as norms to indicate whether job seekers are well informed, have some information, or have little information concerning the occupation for which the trade-question form was prepared.

In the Occupational Research Program one of the jobs for which a trade test was prepared was bricklayer.[9] It was found that approximately fifteen

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[8] Described in Stead and Associates, *op. cit.*, pp. 215–216.

[9] *Ibid.*, p. 36. The Occupational Research Program at the time of publication of this report (1940) indicated that 126 jobs had been provided for by standardized and verified trade questions and that alternate forms were available for 49 jobs. In February, 1942, the United States Employment Service, Division of the Bureau of Employment Security, which carried on the work of the Occupational Research Program, produced *Oral Trade Questions*, Volume 1, Supplement A, and in November, 1942, Volume 1, Supplement B, which presented additional lists of trade questions for use in public employment offices. The program, at the time of this writing, is going forward as the Occupational Analysis Section, Employment Service Division.

questions were satisfactory from the standpoint of sufficient reliability so that the final test lists were made up of the fifteen verified questions. In Figure 32 it is possible to see how valid the lists of oral trade questions were.

SCORE	EXPERT BRICKLAYERS (*65 subjects*) Group A	APPRENTICES AND HELPERS (*25 subjects*) Group B	RELATED WORKERS (*35 subjects*) Group C
15	oo		
14	ooooooo		
13	oooooooooooooooo		
12	ooooooooooooooooooooo [a]		
11	ooooooo	o	
10	ooooo	oo	
9	oo		o
8	oo	o	
7		oo	
6		o	o
5		oooooo [a]	
4		ooooo	o
3		oo	ooo
2		oo	oo
1		ooo	ooooooooooo [a]
0			ooooooooooooooo

a Median score.

FIGURE 32

DISTRIBUTION OF SCORES OF EXPERT BRICKLAYERS, APPRENTICES AND HELPERS, AND RELATED WORKERS ON BRICKLAYER TRADE QUESTIONS, FORM I

Source: William H. Stead, Carroll L. Shartle, and Associates, *Occupational counseling techniques* (New York: American Book Company, 1940), p. 41.

The figure shows the number of questions answered correctly out of the sample list by bricklayers. Group A consisted of sixty-five expert bricklayers; Group B, twenty-five apprentices and helpers; and Group C, thirty-five

related workers. While there is some overlap between the A and B groups, this overlap is not very great. It is seen from the graph that the expert bricklayers received a median score of twelve questions correct whereas the apprentices and helpers got a median of five and, as in the case of the asbestos workers, the related workers got a median score of one.
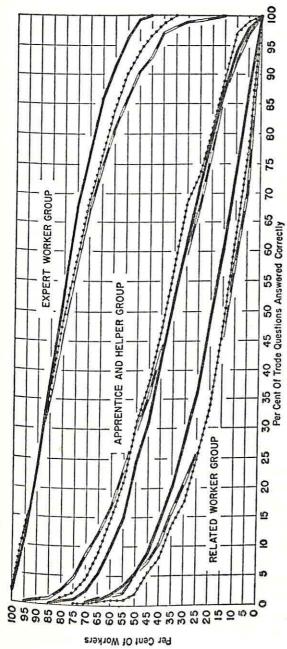
Figure 33 presents a composite of a considerable amount of trade test data. It shows the percentage of workers in expert, apprentice and helper, and related worker groups from three industries and the percentage of trade questions answered correctly for their industry. For example, it is seen from the figure that 60 to 70 per cent of the expert group for all three industries answered 80 per cent of the questions correctly for their industry, while the same percentage of questions was answered correctly by 19 to 21 per cent of the apprentices and helpers, and by 4 to 7 per cent of the related group.

Some Results from the Use of Trade Tests

Written job information trade tests have been developed and used by a number of military, government, and industrial organizations. Such tests can be developed with a high degree of reliability or internal consistency because items can be added until adequate reliability is obtained. The tests, of course, are quantitative and can be scored in an objective fashion.

One notable example of such a program was that of the Personnel Testing Unit at San Bernardino Depot of the Air Technical Service Command. The command developed written job information tests for some ninety-seven different jobs or occupational areas. It used a multiple-choice, best-answer type of item; the tests varied in length from about seventy-five to one hundred items. The staff obtained a high degree of reliability for nine of its tests; in fact, the median coefficient of correlation indicative of the reliability (Spearman-Brown formula) was 0.91.

These tests were correlated with instructors' grades, officer efficiency ratings, on-the-job training chart data, and civil service grade designations. The tests showed fairly high validity: when the instructors' final grades in the civilian training classes were taken as a measure of the trainees' success, the correlation between job information and scores obtained by the written job-information trade test and these grades produced a median validity cor-

FIGURE 33

PERCENTAGE OF WORKERS IN EXPERT, APPRENTICE AND HELPER, AND RE-
LATED WORKER GROUPS FROM THREE INDUSTRIES AND THE PERCENTAGE OF
TRADE QUESTIONS ANSWERED CORRECTLY FOR THEIR INDUSTRY

Source: William H. Stead, Carroll L. Shartle, and Associates, *Occupational counseling techniques* (New York: American Book Company, 1940), p. 43.

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relation coefficient of 0.42 for the tests. Efficiency ratings yielded a median correlation coefficient with the job-information scores of 0.33. Performance in specific job operations dealing with the on-the-job training program was measured. When these measures were correlated with job-information test scores for a group of fifty-five workers, the correlation coefficient was found to be 0.54.

Ratings by foremen on job knowledge of the workers produced correlation coefficients of 0.42 up to 0.66 when correlated with the job-information test scores. Civil service grade was also used as a criterion. The civil service grade yielded a median correlation coefficient of 0.52. Generally the number of cases used for these tests was rather high; however, the exact number of cases was not always indicated in the report.[10]

Another example is useful as an illustration. In a trainee placement situation oral trade tests were used to identify those individuals already employed within a given job classification who could benefit most from further training, as well as those individuals with a high degree of trade information who could be considered as possible supervisory material.[11] The subjects studied were first-class machinists at a naval shipyard. Supervisors furnished the material from which the trade tests were prepared.

In all, ninety-eight first-class machinists selected at random were rated by their supervisors; this performance rating served as a criterion for the evaluation of the trade-test items. The original ninety-five items were sheared down to twenty-one by an item-analysis procedure similar to that described on pages 61–65, so that the items kept were those which best distinguished the high-rated men from the low-rated men. On the basis of the scores made on these twenty-one items, the new test scores were compared to the performance index used as the criterion. A correlation coefficient of 0.53 was found, indicating that the score made on the trade test in its new form showed considerable relation to performance on the job as rated by supervisors.

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[10] Welty LeFever, Alice Van Boven, and Joseph Banarer, Validation studies on job information tests, *Educational and Psychological Measurement, 6:* 1946, 223–233.

[11] E. J. McCormick and N. B. Winstanley, A fifteen-minute oral trade test, *Personnel* (American Management Association), *27:* 1950, 144–146.

Aptitude Tests and Interviewing

Aptitude test results may, in many instances, be more pertinent to the decision to hire than the results of judgments made in the interview or than the results of trade tests, whether they be performance, written, picture, or oral. Aptitude tests are often useful in combination with trade tests. This depends upon the situation. If the job specification does not require skill, knowledge, or experience but if the applicant must be apt and have high potential for learning, then aptitude measurements would be more important than tests of the trade variety.

Aptitude testing is a large, comprehensive subject in itself. This book does not encompass it. There are a number of excellent sources of information and training in the field of psychometrics, several of which may be mentioned. A recent book by Dorcus and Jones is a valuable reference book for business and industrial personnel people, especially interviewers.[12] It consists of noncritical abstracts, mostly from recent references dealing with the selection of employees by means of psychological tests. It does not include data from trade, professional, and commercial schools, military and aviation studies, or studies of accident-proneness. The authors of the book examined 300 different periodicals and many books and monographs. Of the 2100 individual references examined, 427 were selected for inclusion. About 20 per cent of the references are from foreign publications. The particular selection of references would, however, not necessarily cover every study that an interviewer might need to know for his specific situation. The abstracts are presented chronologically by publication date and are numbered. Each abstract includes, in addition to bibliographical data, the number of subjects used in the investigation, the types of jobs under study, tests used, the criterion, and the validity and the reliability indexes when these were available in the original study.

The first part of another text (pages 1–100), which appeared in 1949 and is by Cronbach,[13] is especially recommended for interviewers. The table

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[12] R. W. Dorcus and M. H. Jones, *Handbook of employee selection* (New York: McGraw-Hill Book Company, Inc., 1950, 349 pp.).

[13] Lee J. Cronbach, *Essentials of psychological testing* (New York: Harper & Brothers, 1949), 475 pp.

of contents includes "Who Uses Tests?" "Purposes and Types of Tests," "Interpreting Test Scores," "How to Choose Tests," and "How to Give Tests." The last section of a somewhat more advanced text on personnel selection techniques by Robert Thorndike [14] includes chapters of particular interest to interviewers: "The Administration of a Testing Program," "Administrative Problems in Using the Results of an Aptitude Testing Program," and "The Personnel Selection Program and the Public."

Another encyclopedic source to be used as a reference when information about a specific test is needed is the series of yearbooks edited by Oscar K. Buros. There have been four in the series to date.[15] These books bring the reader up-to-date reviews of new tests as they are published or as new information becomes available on tests previously published. Numerous critical reviews of the tests from a technical standpoint are furnished by users or psychometricians. Each review of a test carries with it the name of the test publisher or test supply house where the test is available. As an indication of the comprehensiveness of the year book, the 1953 edition includes 793 new tests, 596 new reviews, and over 4,000 references to the technical literature on the tests in use.

Summary

Testing procedures may add efficiency to the selection procedure. Trade tests get at specific job knowledge, while aptitude tests measure general ability and potentiality for learning. Trade testing arose during World War I to help interviewers examine and screen recruits quickly for the military jobs for which they were best suited on the basis of their civilian experience.

Of the four kinds of trade tests (performance, written, picture, and

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[14] Robert L. Thorndike, *Personnel Selection: test and measurement techniques* (New York: John Wiley & Sons, Inc., 1949, 358 pp.).

[15] Oscar K. Buros (ed.), *The 1938 mental measurements yearbook* (New Brunswick, N.J.: Rutgers University Press, 1938, 415 pp.).

Oscar K. Buros (ed.), *The 1940 mental measurements yearbook* (Highland Park, N.J.: Mental Measurements Yearbook, 32 Lincoln Avenue, 1941, 674 pp.).

Oscar K. Buros (ed.), *The third mental measurements yearbook* (New Brunswick, N.J.: Rutgers University Press, 1949. 1047 pp.).

Oscar K. Buros (ed.), *The fourth mental measurements yearbook* (Highland Park, N.J.: Gryphon Press, 1953, 1163 pp.).

oral) probably the oral trade test is most used as an interview aid. The picture type of test helps establish rapport with the applicant and minimizes language difficulties. Written tests can be given in large groups and are likely to yield consistent, objective results; however, the profit derived from their use depends upon rather expensive development and verification. The performance test is the most expensive to administer and most difficult to score objectively.

The procedure used in the Occupational Research Program for the establishment of cut-off or critical scores for oral trade tests is recommended for use.

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PROBLEMS IN THE DECISION TO HIRE

Introduction

Selection decisions would not need to be made in Huxley's Utopia. Each person would have been predestined from birth and so nurtured that he would possess the qualifications and attitudes for the particular job which he was to fill. But without such predestination, decisions to hire must be made in order to put an applicant on the payroll. A poor decision to hire can be extremely costly to management, while a good decision may be quite profitable.

In view of the complexity of the problem, the specifics of particular situations, and the lack of accuracy of available procedures, no simple formula can be given for making the decision to hire. It depends upon many interrelated factors. However, a point of view may be formulated and tools reviewed which emphasize dependence upon objective, verified data in hiring decisions.

Who Makes the Decision to Hire?

Top management organizes and delegates the activities to the employment office and operating departments in such a manner that decisions to hire may be made at the most appropriate level. Insofar as top management is able to select competent supervisors, interviewers, and personnel technicians, and to establish the necessary organization and conditions, then the

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decisions to hire may take place with maximum effectiveness. The employment interviewer may be designated as responsible for these decisions.

In some companies, however, final authorization to hire may not rest with the employment interviewer. He may operate a staff activity without final authority. The reason for this is twofold. First, and most important, the interviewer rarely supervises the individual who is hired. The foreman or supervisor may participate effectively in the hiring decision with profit to all.

Second, this procedure engenders valuable communications between the interviewer and the supervisors, the one educating the other. The supervisor is able to give the interviewer up-to-date information concerning technological and work-simplification changes that influence job specifications. The interviewer is able to tell the supervisor what is available in the labor market and to keep supervisors informed as to his technical approaches to the problem of selection.

It is desirable for the interviewer to qualify as a personnel technician, a professional person who brings to the employment situation all the available scientific and clinical skills, knowledge, and techniques. He studies the information obtained about the applicant in relation to critical scores established for the job, he weights the application blank, he interprets test and nontest predictor data on applicants for a particular opening, he interviews the applicant, he forms an evaluation of his possible success in the job. Then, in referring the applicant to the supervisor he makes his impressions available so that the supervisor can make enlightened decisions.

In most companies the employment action, then, may be considered as a joint action taken by the interviewer and the foreman or supervisor who is to be responsible for the new employee at his work.

Factors in the Decision to Hire

There are a number of factors that play a part in the decision to hire. These are discussed in various chapters throughout this book. We shall briefly review and discuss several of these factors below, and in later sections of this chapter consider their role in a synthesis of the information that makes for effectiveness in the decision to hire.

Uhrbrock has described the selection procedure by means of a flow chart showing the steps leading from "reception of applicants" to "placement" (Figure 34).[1] He shows that the steps in the selection procedure include a preliminary interview, the filling out of an application blank, administration of employment tests which may include trade tests, a formal interview by the employment department interviewer, a checkup on previous history of applicants, preliminary selection of applicants in the employment department, interview by the department supervisor or foreman who makes final the decision to hire, physical examination, and, finally, placement of the new employee. It is to be noted that there are three interviews in this selection procedure, two of them in the employment office and one by the department supervisor.

USE OF JOB SPECIFICATIONS

Job analysis provides specifications of each job. These are the minimum hiring requirements. The job analyst ordinarily establishes them by an a priori approach after observing the job. Job specifications include minimum requirements in terms of such nontest predictor items as age, education, and previous experience. It is rare that job analysis and requirements are combined in such a manner to enable quantitative specifications; it is even more unusual to find a situation in which techniques may be developed to combine the information so as to yield maximum forecasting efficiency.

THE SELECTIVE APPLICATION BLANK

The application form should request information aimed to satisfy minimum hiring specifications as determined by job analysis. Primarily this type of application form is valuable because it emphasizes job requirements. Wood [2] has shown that it is not necessary to develop a separate application form for

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[1] Richard Stephen Uhrbrock, Mental alertness tests as aids in selecting employees, *Personnel* (American Management Association), *12:* 1935, 231, and The personnel interview, *Personnel Psychology, 1:* 1948, 277.

[2] See Wendell F. Wood's articles: A new method for reading the employment questionnaire, *Journal of Applied Psychology, 31:* 1947, 9–17, and Reading the employment questionnaire, *Personnel* (American Management Association), *24:* 1947, 123–126.

Reception of Applicants

Preliminary Interview

Application Blank

Employment Tests

Interview

Investigation of Previous History

Waiting List of Desirable Applicants

Preliminary Selection in Employment Department

Final Selection by Foreman or Supervisor

Negative Decision

Physical Examination

Physically Unfit

Rejection

Placement

Physically unfit, personally objectionable, or unfavorable general impression

Unfavorable personal data

Unfavorable test scores

Unfavorable second impression

Unfavorable previous history

FIGURE 34　　　FLOW CHART OF SELECTION PROCEDURE

each job title in the company. He has designed a light cardboard template, the same size as the application blank, with holes cut out over the items which are considered to be hiring specifications for a particular job (see Figures 35, 36, 37, and 38). Beside each cutout on the template appears the minimum requirement or acceptable limits. Irrelevant material on the application form is thus shielded out when the template for a specific job is placed over the form.

Wood cites the following advantages of using a selective application form based on actual job requirements, with a template for each job or class of job:

1. There can arise no question between the employment office and the employing department concerning job requirements, once they are set up with the cooperation of both.

2. An applicant can be judged solely by what he has to offer in terms of qualifications for a particular job.

3. The employment man has definite specifications of the requirements he should look for on a given job.

4. The tendency to rationalize an applicant's qualifications for one job because of his personality traits, or his outstanding experience not related to a given job, is minimized.

5. Considerable time may be saved by the interviewer in cases where he is obliged to hunt through a number of applications to find one with the requirements for a particular job.

6. The employment department, and particularly the interviewers, will learn to think more readily in terms of job elements and may find themselves not so readily inclined to generalize and read information into the application form as in the past.[3]

Note particularly Figures 37 and 38, on pages 200 and 201. They show the desirable personal characteristics and the occupational information appropriate to the job for operator of a turret lathe. Such template folders prepared for several job titles facilitate the placement of applicants during the interview.

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[3] Wood, Reading the employment questionnaire, *loc. cit.*, p. 126. Reprinted by permission of the author and the American Management Association.

ABC COMPANY
APPLICATION FOR EMPLOYMENT
(Please answer all questions by placing answers in spaces provided)

PERSONAL
Date *Oct. 1, 1946*
Full Name *John Paul Doe*
Social Security No. *62-6262-62*
Present Address *100 North Street* City *Chicago* State *Ill.*
Married Yes *X* No___ Children *4* Dependents *5* Age *37*
Sex Male *✓* Female___ Height *6'1"* Weight *205* Color *White* Nationality *U.S.A.*
Place of Birth *Chicago, Ill.* Date of Birth *June 3, 1908*
State of Health *excellent* Disabilities *none* Glasses *no*
Are you willing to be examined by the company doctor? *Yes*

EDUCATION

	Years	Name of school	Course or degree
Grammar School	*8*	*Emerson*	?
High School	*4*	*Washington*	*graduated*
College	*0*		
University	*0*		
Trade School	*2*	*Chicago Tech.*	*Machine Shop*
Other	*0*		

WORK HISTORY

Please indicate the last two places where you have been employed:
Present or last employer *XYZ Company*
His address *200 South Street* His product *Trucks*
Date Employed: From *1936* to *1940* Total *4* Years
Your occupation or job there *Engine Lathe* Hourly or weekly wage *75¢*
Next previous employer *Square Circle Co*
His address *400 West Street* His product *Machine Tools*
Date employed: From *1940* to *1946* Total *6* Years
Your occupation or job there *Turret Lathe* Hourly or weekly wage *$1.20*

Signature of Applicant *John Paul Doe* Date *Oct. 1, 1946*

NAME Doe Last John Paul First Middle SOC. SEC. NO. 62-6262-62 DATE Oct. 1, 1946

FIGURE 35

FRONT SIDE OF AN APPLICATION BLANK

Source: Wendell F. Wood, A new method for reading the employment questionnaire, *Journal of Applied Psychology, 31:* 1947, 12.
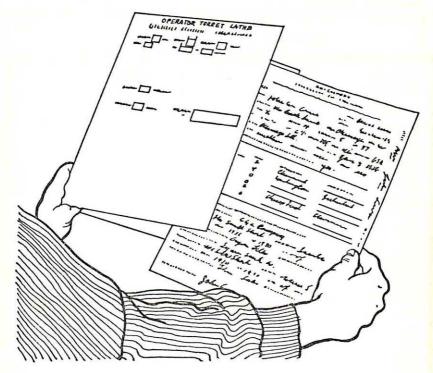
FIGURE 36

AN APPLICATION BLANK BEING INSERTED INTO A TEMPLATE FOLDER
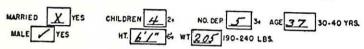
Source: Wendell F. Wood, A new method for reading the employment questionnaire, *Journal of Applied Psychology, 31:* 1947, 13.

THE ITEM-ANALYZED INTERVIEW FORM AND APPLICATION BLANK

The preparation of the template for aiding or guiding the interviewer in his decision to recommend hiring an applicant may be based upon statistical analysis or it may be entirely a priori. Ordinarily it is a priori—i.e., based on an armchair judgment. We have reviewed several studies which illustrate that a priori judgments are not valid concerning what specific interview items might be related to success on a job. Sometimes they are even negatively related to success. For jobs with a sufficient volume of employment to warrant the expense we urge careful item analysis of interview forms and

FIGURE 37

FRONT SIDE OF TEMPLATE FOLDER SUPERIMPOSED ON THE CORRE-
SPONDING SIDE OF AN APPLICATION BLANK

Source: Wendell F. Wood, A new method for reading the employment questionnaire,
Journal of Applied Psychology, 31: 1947, 14.

FIGURE 38

BACK SIDE OF TEMPLATE FOLDER SUPERIMPOSED ON THE CORRE-
SPONDING SIDE OF AN APPLICATION BLANK

Source: Wendell F. Wood, A new method for reading the employment questionnaire, *Journal of Applied Psychology, 31:* 1947, 16.

application blanks, so that the job specification indicated on the template would have at least some basis in validity.

THE USE OF TRADE AND APTITUDE TESTS

Trade tests are appropriate for certain jobs, as discussed in Chapter 11, especially those requiring the use of technical language or technical objects for efficient job performance. For some jobs and occupations it is feasible and profitable to utilize aptitude tests as well as trade tests. And in some specific situations it is clearly desirable to utilize aptitude and trade tests without regard to interview data as defined below. This depends upon the job, the job situation, and labor market conditions.

ACTION INTERVIEW DATA

We have defined interview data strictly as observations made during the action interview itself and judgments based on these observations, as compared to items which are a matter of record and can be obtained from sources other than the interview. In other words, as has been discussed in previous chapters, if we wish to make ratings as to personal appearance, bearing and manner, voice and language, and other personal characteristics, we might best do this in the interview situation in the most systematic way possible, by the use of manualized rating procedures. We may also validate such items and combine those considered strictly as interview items with other nontest and test predictor items which are obtained from sources other than the interview itself.

We do not, however, define the whole interview process so as to limit it to the gathering of judgments based on observations made during the action interview. We have considered the interview process to be broader than this, and we have emphasized this broadened concept. The interview process includes, for our purpose, all information that goes to make up our decision to hire. We have been inclined to de-emphasize the direct interview source; it is a rather poor way of gathering information that is realistic, objective, unbiased, and valid.

MEDICAL DATA

It is not unusual for the interviewer to attempt to make his own judgments as to the physical stamina or general health of the applicant. He attempts to do it sometimes by a glance at the applicant even before he is seated in front of him. It is best for the interviewer to spend his time with the applicant in gathering the kind of information that the interview itself makes possible. It is not possible for the interviewer to make valid and meaningful judgments about the applicant's health except in gross, extreme cases. If job specifications call for physical information about the applicant, medical sources should supply the data.

REFERENCES FROM FORMER TEACHERS AND EMPLOYERS

For applicants who have had little or no work experience, it is well to obtain references from former school or college instructors. The form used by one company to obtain a reference from a former instructor is shown in Figure 39. The form requests the instructor to rate the applicant on potential ability to sell (an estimate); personality; industry, determination; aptness in learning; creative ability, resourcefulness; dependability, cooperation; and disposition, balance. In addition to these ratings, the instructor is asked to furnish other comments about the individual.

Concerning applicants who have enough previous work experience former employers may be willing to furnish a judgment of performance. It is of value to obtain such references and to check reports by former employers against the information given by the applicant on the application blank. All periods of previous schooling and employment claimed by the applicant should be verified and all unemployed time accounted for. This is especially crucial on jobs where there is need for personal honesty such as responsibility for handling money. There seems to be no workable technique yet devised for measuring honesty. The best indicator available is probably the applicant's past history. If the job requires honesty, and if the applicant has not been honest in the past, he should not be hired, regardless of his trade knowledge or skill as measured, regardless of high aptitude trade-test scores, how-

Burroughs
CONFIDENTIAL REPORT ·

_____ Branch

To _____

_____

_____

M_____ of _____ states that
courses were studied under your instruction while attending_____

from_____ to_____

We are making a careful study of the qualifications of this applicant to determine whether it would be in the
applicant's best interests to consider a position as_____ in our business of furnishing
a complete line of accounting and figuring machines.

We have requested the school to send us the names of courses studied and grades obtained by the applicant. Will
you kindly give us your answers and comments on the following points and any other comments which you feel would
be helpful to the applicant in choosing a life's work?

A stamped return envelope is enclosed for your convenience.

Very truly yours,

_____

Manager

	Superior	Good	Average	Below Average	Unsatisfactory	Comments
Potential ability to sell a quality product (your estimate)						
Personality						
Industry—determination						
Aptness in learning						
Creative ability—resourcefulness						
Dependability—Co-operation						
Disposition—balance						

For what type of work do you think applicant is best fitted?_____

Would you strongly recommend that applicant enter sales work?_____

Other comments (you may also use reverse side):

(Signed)_____

Date_____

(Title)_____

Printed in U. S. America

Form 40—10M-5-43-Methods (D6797)

FIGURE 39

FORM USED IN THE BURROUGHS CORPORATION TO OBTAIN A REFER-
ENCE FROM A FORMER INSTRUCTOR

ever valid they may be, and regardless of other items which may point to probable success.

There are several ways of obtaining references from former employers or instructors. One is to write a letter. Another is to send a prepared form, similar to the one in Figure 39. Another more personal way is to telephone the reference and discuss the applicant with him. Of course, the telephone type of interview is open to the pitfalls of the usual interview unless it is fairly well guided. A form which McMurry suggests for telephone interviews is reproduced in Figure 40. It seeks confirmation of the applicant's statements as well as an appraisal of his ability.

The accuracy of work histories given by the applicant was the subject of a study conducted by Keating, Paterson, and Stone.[4] A total of 236 cases was selected at random from the Minnesota State Employment Service Office, St. Paul, for a study of the accuracy of the applicants' reports of past employment in relation to weekly wages, duration of employment, and job duties. The investigators found the applicants' report of their work history to be very accurate.

Methods of Making the Decision to Hire

The controversy between the clinical and the extreme quantitative or scientific approaches to the decision to hire is a matter of degree rather than of kind. The more item analysis and validity information that is available the less the interviewer is compelled to rely upon clinical "intuition" in making hiring decisions or recommendations.

THE CLINICAL METHOD

Authorities differ in their opinions on the role the clinical method should play in employment interviewing. For most, if not all hiring situations, the clinical method still plays a role, if not the predominating one. It is virtually impossible, as we have seen, to throw all available items of information into an equation so that we can get a so-called scientific index of the total indi-

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[4] Elizabeth Keating, Donald G. Paterson, and C. Harold Stone, Validity of work histories obtained by interview, *Journal of Applied Psychology, 34:* 1950, 6–11.

TELEPHONE CHECK WITH PREVIOUS EMPLOYERS

Company	City and State	Telephone No.

Name of Person Contacted	Position of Person Contacted

1. I wish to verify some facts given by Mr._____ who is applying for employment with our firm. What were the dates of his employment by your Company?

   From_____ 19____ To_____ 19____
   IS ANY PERIOD UNACCOUNTED FOR?

2. What was the nature of his job at the start and when he left?

   At start_____
   HAS APPLICANT OVER-RATED HIS JOB?

   At leaving_____
   HAS HE SHOWN PROGRESS?

3. He states that he was earning $_____ per_____ when he left. Is that correct?

   Yes_____ No_____ $_____
   (IF NO) WHAT DID HE FALSIFY?

4. What did his superiors think of him?

   _____
   DOES HE RESPECT AUTHORITY?

5. Did he have supervisory responsibility? (If yes) How did he carry it out?

   No_____ Yes_____
   CHECK WITH APPLICATION?
   DID OTHERS ACCEPT HIM AS A LEADER?

6. How hard did he work?

   _____
   IS HE A "GOLDBRICK"? INDUSTRIOUS?

7. How did he get along with others?

   _____
   IS HE A TROUBLE-MAKER?

8. How was his attendance record?

   _____
   IS HE STABLE AND CONSCIENTIOUS?

9. What were his reasons for leaving?

   _____
   VALID? CONSISTENT WITH REASONS HE GAVE?

10. Would you rehire him? (If no) Why?

    Yes_____ No_____
    (IF NO) WILL HE FIT INTO OUR COMPANY?

11. Did he have any domestic, financial or personal trouble which interfered with his work?

    No_____ Yes_____
    IS HE EMOTIONALLY MATURE?

12. Did he drink or gamble to excess?

    No_____ Yes_____
    IS HE EMOTIONALLY MATURE?

13. What are his strong points?

    _____

14. What are his weak points?

    _____

Comments_____
WHAT ARE HIS CHANCES FOR SUCCESS IN OUR COMPANY?
WHAT POINTS WARRANT FURTHER INVESTIGATION?

Checked by_____ Date_____ 19____

FIGURE 40

TELEPHONE CHECK FOR OBTAINING REFERENCES FROM FORMER EMPLOYERS

Source: Developed by Robert M. McMurry and reprinted here by permission of Science Research Associates.

vidual. Some experts would say that even now, in spite of our present stage of incompleteness of validation of information for personnel employment, we should use objective data only. Others say that objective measures have little or no place in the decision to hire, that they are still in the experimental stage, and that hiring is an art, not a science. The clinical method, they say, is the only one to follow.

Dunford has presented a method for evaluating the capabilities of applicants, which he calls *The Adjusted Graphic Analysis Scale* (see Figure 41).[5] The chart is constructed "to separate out diagnostic signs of ability and potentiality and to provide a profile picture of the elements pertinent to probable success on the job." [6] The applicant's qualifications are checked on the appropriate scales. The line connecting these points might be called a profile for the applicant. The general shape or direction of the profile suggests the potential value of the applicant.

THE MULTIPLE CUT-OFF METHOD—SUCCESSIVE HURDLES

The decision to hire may be based on more valid procedures than the pure "out-of-the-blue" decision made by the clinical method. The trained interviewer deals with a number of tools for improving his decision to hire. The several techniques which have been suggested for use can be recommended after they have been tried out within the company and have been shown to differentiate to a satisfactory degree between a sample of successful and unsuccessful employees. The question becomes one of deciding what the acceptance or rejection point shall be on these several variables. Is a raw score of 15 acceptable on the trade test, or is at least 16 required? Are the chances for success better for the man who is married and, if so, how rigid should this requirement be? Should only college graduates be hired for a particular job or do persons with two years of college make out just as well or better?

The way in which the critical or cut-off scores is derived is similar for almost all kinds of quantified variables, whether test scores, interview rat-

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[5] R. E. Dunford, The adjusted graphic analysis chart, *Journal of Applied Psychology*, *23:* 1939, 623–629.

[6] *Ibid.*, p. 626.

Name ....

Give position and grades on each Civil Service qualification

Position analysis made for ....

Age — 25 30 35 40 45

Education — 1 2 3 4 5 6 7 8 | 1 2 3 4 | 1 2 3 4 | 1 2 3

Experience in field applied for or closely related — 5 10 15 20

Progressive character of experience — Regressive | Irregular | Level | Fair Progress | Excellent Progress

Highest salary for 1 yr. or more duration —
Prof. Engr. Sci.
Adm. & Fiscal — 1 2 3 4 5 6
All other groups — 1 1.5 2 2.5 3 3.5 ×

Refs. bearing on field applied for — Generally unfavorable | Reservations | Not outstanding | Good | Among ablest

General refs. — Poor | Fair | Good

Years of experience in other fields — 5 10

Comments

Analysis results

Examiner

ings, or interview guide scores. To perform the analysis, scores made by a group of good employees and the scores made by a group of poor employees are needed. After the relationship between scores and job performance is studied a statement can be made about how valid the scores were in distinguishing between the job success of the two groups. On the basis of such information, an estimation may be made concerning the minimum or maximum scores acceptable as hiring specifications.

It is recommended that a number of such variables be used to maximize the goodness of the selection procedures. The interviewer may ask, and rightly so, What if a person is above the critical score on all variables except one? Should he be hired? The problem is to determine the best way to combine the several variables to yield the best decisions. Two ways of screening are often used: (1) multiple screens or multiple cut-offs—sometimes called successive hurdles, as in the flow chart Uhrbrock devised and shown above; and (2) composite scores derived by multiple correlation methods.

In the successive hurdles approach the interviewer uses the several variables in the order of their correlation with job success. If his most valid procedure seems to be test scores, he views all applicants first with respect to whether or not they meet the critical score on this variable. Those who do not are dropped from consideration at that stage in the selection process. If they pass this hurdle, he views them in the light of his next most valid tool, perhaps the weighted application blank. Thus, in screening, he successively eliminates applicants as they fail to pass the hurdles. He hires applicants who pass all the hurdles.

The multiple cut-off method has three advantages, according to Cronbach:

1. It does not assume that strength in one ability compensates for inadequacy in another important ability.

FIGURE 41 (OPPOSITE)

GRAPHIC ANALYSIS CHART FOR EVALUATING THE CAPABILITIES OF PROFESSIONAL AND SUBPROFESSIONAL GROUPS

Source: R. E. Dunford, The adjusted graphic analysis chart, *Journal of Applied Psychology*, 23: 1939, 625.

2. It is easier to compute and easier for the layman to understand than a composite formula. It is usually easier to administer.

3. Retaining the scores of separate tests in the record permits more effective guidance or placement than an undifferentiated composite or average.[7]

The multiple-correlation approach. The multiple-correlation approach utilizes a statistical formulation of a composite cutting score. Each of the several selection variables is correlated with the criterion. From these coefficients can be determined how much emphasis should be placed on any particular selection device. A technician weights each possible score for all variables in a multiple regression equation and derives composite scores. An over-all critical score can then be determined for making the decision to hire. It can be seen that if a person is very high in one area of ability but average or very low in another, he still may meet the selection standard when these measures are combined. Cronbach has cited these advantages for the multiple-correlation method:

1. It indicates the rank, in all-around ability, of men who pass the screen. This is useful in identifying men requiring special assistance during training, or for singling out superior men for special responsibility.

2. For a particular man, it permits a comparison of his probable success in various specialties, instead of merely eliminating the assignments in which he would fail.

3. It permits combining the tests in that proportion which gives the highest correlation. Prediction is therefore more accurate than with a multiple cut-off.

4. It yields, in the multiple correlation, a simple estimate of the efficiency of prediction from the test battery. The formula also indicates the contribution of each test to the final prediction.[8]

Figure 42 outlines graphically the difference in the assumptions made under the two plans.

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[7] Lee J. Cronbach, *Essentials of psychological testing* (New York: Harper & Brothers, 1949), p. 254. Reprinted by permission of Harper & Brothers.

[8] *Ibid*. Reprinted by permission of Harper & Brothers.

Suppose an intelligence test and a coördination test both predict a certain job, as indicated by the following data:

○ Good men   ● Failures on job
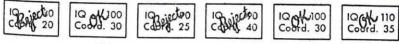
Then suppose six new applicants are being considered. whose scores are as follows:

IQ 80	IQ 100	IQ 90	IQ 90	IQ 100	IQ 110
Coörd. 20	Coord. 30	Coord. 25	Coord. 40	Coörd. 30	Coörd. 35

Multiple-screen method of selection

The scatter diagram shows that men with IQ 80 or 90 tend to fail on the job. Also, men with coördination of 20 or 25 tend to fail. It is therefore decided to screen out all applicants with IQ below 100, or coördination below 30.

This is how the six men are judged by this method:
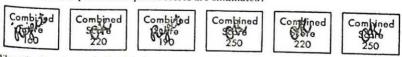
Multiple-correlation method of selection

The statistical computations of this method set up a prediction formula for combining the scores. In this problem the formula might be *IQ + 4 times Coördination.*

This formula is applied to each man, with these results:

Combined Score 160	Combined Score 220	Combined Score 190	Combined Score 250	Combined Score 220	Combined Score 250

The men with the poorest composite scores are eliminated:

When the fourth man is hired, it is assumed that his superior coördination makes up for his lack of intelligence. On some jobs this assumption is unsound.

FIGURE 42

COMPARISON OF MULTIPLE-SCREEN AND MULTIPLE-CORRELATION METHODS

Source: Lee J. Cronbach, *Essentials of psychological testing* (New York: Harper & Brothers, 1949), p. 255.

Of these two methods, perhaps the multiple cut-off or successive hurdles approach is more generally workable. It does not assume that weakness in one ability is canceled out by some other superior ability.

The Dynamic Aspect of Validity

In the employment process, neither the tools with which the interviewer works nor the job situation with which he deals remains the same from one time to another. As conditions change, the interviewer must allow for and alter his selection technique. No generalization can be made to future samples of applicants except to say that *if* the job is the same, *if* test motivation is the same, *if* the labor market is the same, *if* the criteria are the same, then we may expect similar validity in the use of the tools.[9] This caution of the personnel technician is well advised. Changes in any of the above conditions might altar the effectiveness of the tool in use.

One of our fundamental theses is that validity information must be considered in the past tense, not the present or the future tense. We say that the validity of an item of information, whether test item or nontest item, *was* of a certain magnitude. We never say that the validity of such and such an item of information *will be* significant. Conditions concerning the applicant population as well as the job situation and its psychological requirements are dynamic—they change from time to time.

Consider how changes in a business office might invalidate an existing selection program: a new manager with modern methods replaces the previous one. He has replaced hand bookkeeping by improved machine methods. He has permitted rest periods twice a day where none had been allowed before. Once a month the office workers get together for a bowling party, a dance, or a picnic. Morale is high. A new kind of job situation exists. Perhaps the poorest workers under the previous manager are now responding to the new ways and have become efficient performers.

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[9] Some problems are encountered in interpreting changes in validity. In this connection, see H. F. Rothe, Distribution of test scores of industrial employees and applicants, *Journal of Applied Psychology*, 31: 1947, 480–483; M. H. Macmillan and H. F. Rothe, Additional distributions of test scores of industrial employees and applicants, *Journal of Applied Psychology*, 32: 1948, 270–274; and Eleroy L. Stromberg, Testing programs draw better applicants, *Personnel Psychology*, 1: 1948, 21–29.

Changes of this kind suggest that the interviewer must re-evaluate his techniques and selection procedures frequently. Any passage of time is sufficient to cause a change in his company, in the composition of his employee work force, and in the composition of the labor market from which he recruits, as well as changes in the job methods and job duties into which he feeds new hires. To accumulate information for sharpening up and revalidating as necessary portions of his selecting procedure he must systematically follow up the people he hires (see the section on dependability in Chapter 3).

Inasmuch as validity must be spoken of in the past tense, it seems apparent that there is still a considerable amount of room for the clinical role in the decision to hire or not to hire an applicant. Even if we had much information as to the validity of items for many jobs, we would still admit the clinical approach. This does not negate the desirability of making a greater effort to obtain more and better objective studies of the validity of items. Indeed, we will never be able to increase our ability to make more satisfactory and profitable hiring decisions unless we do research work on items affecting employee efficiency and tenure.

Summary

The interviewer collaborates with the supervisor or the foreman in making the decision to hire. However, the interviewer brings all of the techniques available to furnish the supervisor with a better basis for making his decision.

Some experts claim that interviewing is still an art and, as such, depends upon clinical judgment as the basis for the decision to hire. Others claim that the extreme objective approach is to be relied upon. In either approach, job specifications and item-analyzed, validated data are of utmost importance. One way of improving judgment would seem to be to use selection techniques in the order of the amount of their validity in relation to the criterion. This is called the successive hurdles or multiple cut-off approach. It enables the employment representative to screen out unsuitable applicants as they fail to meet these successive hurdles. Its advantage over multiple correlation as a method is that it does not permit weakness of the applicant in one criti-

cal area to be canceled out by strength in another. It is easier to use and easier to understand than the multiple regression correlation formula. The reader is reminded that conditions surrounding people at work are dynamic; hence the obtained validity of a selection tool may be only temporary.

SUPPLEMENTARY REFERENCES

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agement Association), *24:* 1947, 123–126.

HOW THE INTERVIEWER CAN REDUCE TURNOVER COSTS

Up to this point we have been primarily interested in selecting people who will be efficient on the job. In this chapter the definition of a satisfactory employee will be broadened to include not only quantity and quality of output but also long tenure, so that the company recovers its initial hiring investment. Efficiency and tenure may be interwoven; however, for the purpose of analysis, it is well to keep them separate. The interviewer is concerned with techniques for finding out characteristics differentiating a long-term employee from a short-term employee. Knowing the earmarks of the short-term employee enables the interviewer to reject the potentially short-term employee at the hiring point.

Personnel research on the "turnover-proneness" of employees has been more precise than prediction of their probable efficiency. The reason for this is that "success" is simpler to define for a turnover study than it is for a study of employee efficiency. How long a person stayed is a matter of record: he stayed less than three months or more than three months; he stayed at least one year or he stayed less than one year. Tenure is quantitative and objective, and records of tenure are comparatively simple to obtain.

Identifying the "Turnover" Employee

While it is fairly easy to develop a criterion of job tenure in research, it is not so easy to identify the "turnover" employee. At first glance this

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would seem to be a relatively simple thing to do; one would merely include everyone who had left the company. But, for obvious reasons, we should separate the voluntary quits from those who were discharged. The voluntary quits may well have been highly competent people who found the job too routine and who tended to quit voluntarily to seek a job at a higher level. The employees who were fired, however, might very often have been incompetents who could have been identified by test scores or personal data analysis because their characteristics make them unlike the more successful people on the job. We are not concerned with competency now but rather with keeping the potentially voluntary quits out of the company.

Wilson [1] has described functional turnover categories so that only the "turnover-prone" or characteristically short-term employee is selected for study (see Figure 43). Involuntary quits are not included in the sample. The irreducible minimum amount of turnover which a company might expect is what Wilson termed "involuntary quits"—people who probably would have otherwise continued working if it were not for marriage, pregnancy, leaving the city, death, or other "external causes" beyond the influence of the company.

The trend in the amount of voluntary quits is reflected in the *Monthly Labor Review*. The proportion of separations due to resignations rises in a period of high employment and falls during depression years. During the period 1922–1926, 78 per cent of the separations in American manufacturing industry were resignations. In the period 1930–1940, this proportion was only 25 per cent (a low of 11 per cent in February, 1933).[2] In 1948, resignations were 62 per cent of total separations, 36 per cent in 1949, and 50 per cent for the first eight months of 1950.[3]

[1] Ronald Francis Wilson, Telephone operator traits and traits of their trainers as predictors of operator turnover. A doctoral dissertation, Purdue University, Lafayette, Ind., 1951, p. 5.

[2] W. S. Woytinsky, *Three aspects of labor dynamics* (Washington, D.C.: Committee on Social Security, Social Science Research Council, 1942), pp. 36, 52.

[3] These data are summarized in a table, Current Labor Statistics; Part B. Labor Turn-over, *Monthly Labor Review, 71:* 1950, 742–744.

All Cases
100%

Quit without notice—no reason obtained Leaving city, single Another job Health Hours of work Transportation Don't like the work Can't do the work Miscellaneous reasons—job adjustment	Voluntary Quits (These cases selected for analysis)

Desirable
Minimum

Discharge Layoff	

Irreducible
Minimum

Marriage Pregnancy Leaving city with husband Death Miscellaneous "external causes"	Involuntary Quits

FIGURE 43

FUNCTIONAL TURNOVER CATEGORIES

Source: Ronald Francis Wilson. Telephone operator traits and traits of their trainers as predictors of operator turnover. A doctoral dissertation submitted to Purdue University, Lafayette, Ind., 1951, p. 5.

EXIT INTERVIEW

The reasons given by employees for separation have been tabulated from the records of the exit interview, or separation interview. In an automobile manufacturing company, the most frequently expressed reasons given by 200 voluntary quits were transiency (30 per cent), other employment (27 per cent), and dissatisfaction with job (14 per cent).[4] Spicer has reported

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[4] From an unpublished study by Sidney McKenna and W. J. O'Sullivan: An attitude survey of hourly terminees, 1948.

similar findings in another manufacturing plant.[5] Of the voluntary quits in a six-month period, 27 per cent left for other jobs, 19 per cent were going to school, 18 per cent were leaving the state, and 10 per cent were "dissatisfied." In neither study cited were earnings given as a predominate reason for quitting.

Costs of Turnover

Business profits are reduced by excessive employee turnover. Often the amount of loss resulting from employee separations is not known to the company. Some of the costs are hidden. The fact that across the country the turnover rate is approximately 50 per cent a year indicates a tremendous loss to general welfare, a loss which interviewers can do something about.

Clarke reports $127, $180, and $227 as the cost of replacing one employee given by different companies.[6] Felton states that the United States Civil Service Commission estimated a cost of $250 to replace one war worker.[7] In some extreme cases, it may cost as much as $5000 to hire and separate an individual. For example, in the marketing activity of the Burroughs Corporation a young college graduate hired as a trainee for the business engineering or office installations course is trained for one to two years without much return to the company. This training is exceedingly expensive, for training and overhead costs are added to the several thousand dollars of salary paid to the individual. Thus if the employee quits after the training period, the total amount of money that the company has spent on him will be virtually a loss. This is one reason why the Burroughs Corporation has given a great deal of attention to turnover problems during the last thirty years; it has reduced turnover in the marketing activity, through planned selection and personnel policies, to approximately 6 per cent a year (see measurement of turnover rate below).

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[5] From an unpublished study. Lawrence G. Spicer, A statistical and narrative analysis of separated employees' opinions concerning the personnel policies of the Detroit plant, Nash-Kelvinator Corporation, over a six-month period of time. [Date of study was 1947.]

[6] F. R. Clarke, Labor turnover studies, *Personnel Journal, 25:* 1946, 55–58.

[7] J. S. Felton, Lowering personnel turnover, *Industrial Medicine, 15:* 1946, 682–684.

Losses experienced by a boiler-making company each time a worker leaves the company's employment are as follows: [8]

Loss of production between decision to quit and actually quitting	$10.00
Loss of production between time former employee left and new employee starts	48.00
Employment office salary cost—handling leaving transactions	1.87
Employment office salary cost—hiring new employee	3.75
Medical division cost, physical examination	1.10
Payroll and accounts salary cost, leavers and replacements	5.00
Shop office salary costs, leavers and replacements	2.00
Supplies cost, stationery, photographs, etc., for new employees	.50
Loss in production, spoilage by new employee	10.00
Loss of materials, spoilage by new employee	5.00
Extra supervision, floor space, equipment, etc., required to bring new employee to point of standard production	7.00
Rent, light, heat, office of employment department	1.00
Medical division cost, frequency of accidents among new employees above normal	.25
Total	$95.47

The interviewer, the industrial relations director, and members of top management should be aware of these studies of the cost of employee turnover. Likewise it is desirable for personnel management to study and utilize appropriate methods for measurement of turnover rate, as we have described them below. This will make possible proper emphasis on the development and evaluation of tools at the disposal of the interviewer for the purpose of reducing the number of turnover-prone employees hired.

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[8] *Balancing production and employment through management control* (Washington, D.C.: Chamber of Commerce of the United States, Department of Manufacture, 1930), p. 42.

Measurement of the Turnover Rate

Turnover rate is a number, expressed as a percentage, indicating how many employees left the company for every one hundred still on the payroll. It may be calculated by the month or by the year; usually both indexes are kept by the company so that trends may be observed. A low annual turnover figure may be about 7 or 8 per cent; high turnover rates may run anywhere from 20 per cent to 400 or 500 per cent, or even much higher in some companies. Estelle Karps of the National Retail Dry Goods Association has suggested that an acceptable annual turnover rate for department stores is between 8 and 10 per cent, and that a turnover rate of 20 per cent is excessive.[9]

If every employee who separated were replaced by another, turnover rate would be simply the total number of employees hired to replace terminees. This was, in fact, one of the earliest methods of measuring turnover. The formula was:

$$\text{Turnover rate} = \frac{R \text{ (replacements)}}{F \text{ (average working force)}} \times 100.$$

It was based on the theory that employees who are not replaced cost nothing and may even accrue economic advantages to the company. This method was first described by Paul Douglas, in 1919.[10]

More recent formulas to calculate turnover rate have utilized two rates: a rate of separation and a rate of accession. The difference between them represents a trend of increasing or decreasing size of employed force. It is the procedure which has been set down by the Bureau of Labor Statistics of the United States Department of Labor and is in use by a rather large number of firms.[11]

The procedure in computing the turnover rate (rate of separation) is as follows: (1) Compute the average number of employees employed

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[9] Described in James N. Mosel and Richard R. Wade, A weighted application blank for reduction of turnover in department store sales clerks, *Personnel Psychology, 4:* 1951, 177–184.

[10] Paul H. Douglas, On the computation of the percentage of labor turnover, II. Methods of computing labor turnover, *Bulletin of the Taylor Society, 4:* 1919, 19–20.

[11] United States Bureau of Labor, *Standard procedure for computing labor turnover,* Bulletin No. 616 [no date].

MONTHLY ANALYSIS OF TURNOVER
Ajax Spring Company
This City

Job Title	On Payroll at Beginning of Month	On Payroll at End of Month	Average Employment for Month
Foreman	43	44	43.5
Clerical	82	77	79.5
Sales	120	142	131.0
Machine operator	73	80	76.5
Assembly operator	194	201	197.5
Company total	512	544	528.0

a These are hypothetical data.

FIGURE 44

CALCULATION OF TURNOVER RATE (ACCESSION OR SEPARATION) FOR SEVERAL JOB TITLES [a]

Formula used in above computation is:

$$\frac{\text{(accession)}}{\text{(separation)}}\text{rate per 100 employees} = \text{number of }\frac{\text{(accessions)}}{\text{(separations)}}\text{ for month} \times 100.$$

during the month: add together the number on the payroll on the first and last days of the month and divide this sum by two; (2) divide the total number of separations during the month by the average employment figure just computed; (3) multiply this number by 100 to give the separation rate per 100 employees for the month.

$$\frac{\text{total separations for month}}{\text{average employment during month}} \times 100 = \begin{array}{l}\text{separation rate}\\\text{per 100 employees}\\\text{(turnover rate).}\end{array}$$

Figure 44 shows how these rates are computed for several job titles. For the job title of foreman, in this hypothetical example, 43 were on the payroll at the beginning of the month and 44 were on at the end. The average employment was 43.5. There were 7 separations:

$$\frac{\text{7 separations}}{\text{43.5 average employment}} = 16.1 \text{ per cent, separation rate/100 employees}$$

MONTHLY ANALYSIS OF TURNOVER
Ajax Spring Company
This City

No. of Separations	*Separation Rate/100 Employees*	*No. of Accessions*	*Accession Rate/100 Employees*	*Trend of Employment*
7	16.1	8	18.4	+2.3
22	27.7	17	21.4	−6.2
42	32.1	64	48.9	+16.8
6	7.8	13	16.9	+9.1
11	5.6	18	9.1	+3.5
88	16.7	120	22.7	+6.0

Highest turnover for this hypothetical company was in sales, with a separation rate of 32.1 per 100 sales personnel.

Accession rate, or the number of workers added to the labor force, may be computed in the same way as separation rate, merely by substituting the number of accessions for the period for the number of separations. In the hypothetical example used in Figure 44, the sales job had 48.9 per cent new hires for every 100 employees in that job title. Only 9.1 per cent new hires per 100 employees were taken in the assembly operator job title.

The difference between the accession and separation rates reflects the growth or shrinkage of the company's work force. Sales positions, in the hypothetical company, were increasing during this period, while clerical hires were down.

Often, a valuable use of a measurement of turnover is to locate areas or departments where the rate is high. If the measurement of turnover is kept by each job title, it may be found that most of the turnover for the company is concentrated in a few specific departments or job families, indicating that emphasis by interviewers should be centered on them, and so that remedial work can be done.

The turnover rates found in one company may be compared with those in other companies or compared with the industry as a whole across the

country. Comparative figures are available in the *Monthly Labor Review*,[12] published by the Bureau of Labor Statistics, United States Department of Labor, which secures data from some 5800 firms in 135 industries. The National Industrial Conference Board also provides similar comparative turnover data.

A Priori vs. Scientific Approaches to Prediction of Turnover

The consensus from a number of turnover studies conducted in industrial establishments seems to be that there is no substitute for a systematic approach to turnover control. A priori guesswork has no place here. Attractive as the idea may be, it is not possible to find out how long a person will stay on the job either by looking at him or by asking him. To the uninformed one way of finding out who will be likely to stay is to ask workers whether or not they like the work: "Joe, how long will you stay here? Do you think you're going to like it here?" The difficulty with this approach is that Joe cannot say; he doesn't know if he will like it or not. It is naturally assumed that those people who say they don't like the activities involved in factory work will not stay very long. And if they say they do like the activities, one would expect that they would stay. According to objective studies of this sort of thing, the truth is just the opposite.

A study by Bolanovich illustrates this point.[13] Bolanovich conducted the study in 1944–1945 among workers in a Camden, New Jersey, factory of the Radio Corporation of America. He later verified his findings at another plant at Indianapolis, Indiana. The employees used for Bolanovich's first study were 666 women, working close together at long benches, assembling, crimping, and soldering electrical assemblies. There was little or no selection at the time of hiring except by a physical examination. The work was simple, repetitive.

Bolanovich gathered information on the interests of these women by use of a paper-and-pencil inventory. This may be considered as an interview

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[12] Labor turnover in manufacturing, mining, and public utilities, February, 1947, *Monthly Labor Review, 64:* 1947, 931–935.

[13] D. J. Bolanovich, Interest tests reduce factory turnover, *Personnel Psychology, 1:* 1948, 81–92.

technique in terms of our broader view of the interview process. The inventory was set up so that there were several possible responses; the applicant could make his choice and his responses could be scored by a key. There were 271 items in the interest sampler. Of these, 114 were significantly related to turnover. Some of the responses were more powerful than others in differentiating between short-term and long-term employees. By using an appropriate cut-off score on this interest sampler, Bolanovich demonstrated that turnover occurring during the first three months could have been reduced by 55 per cent.

Examination of the items that had greatest predictive power disclosed a curious and challenging pattern.

> Contrary to what we had expected, it is not those people who say they like activities and conditions similar to those in the factory, who stay on the job. Rather, there is a fairly consistent pattern in just the opposite direction: "Dislike" responses to various mechanical and repetitive factory operations receive positive weights, while "Like" responses receive negative weights. We have tentatively identified this pattern as a *more realistic thinking* on the part of those women who stay in the factory situation.
>
> Another possible pattern characterizing the factory group seems to be a *preference for very simple activities free of any responsibility for thought and application,* and a dislike for opposite activities. This seems to be demonstrated in preferences for carrying messages, dialing or tuning a radio, addressing letters, taking tickets, etc., and a dislike for reading magazines, taking courses of study, cataloging books, making furniture, handling chemicals or broken glass, using a micrometer, proofreading, etc.[14]

This teaches us that often the "common-sense" approach of the interviewer and of the layman leads to incorrect conclusions. This is another reason for item analysis: teasing out differences between long-term groups and short-term groups. There is no substitute for this kind of detective work, the approach by item analysis. It is the approach recommended throughout this book.

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[14] *Ibid.,* pp. 86–87. Reprinted by permission of *Personnel Psychology.*

Identifying the Turnover-Prone Applicant

Analysis of application blank items is frequently a simple yet effective device for predicting the tenure of applicants. The technique for item analysis is similar to that suggested for prediction of efficient or "good" employees on the basis of personal data (see pages 61–65). A group of "long-termers" (persons employed one year or longer, or a suitable unit of time) and a group of "short-termers" (voluntary quits, those who quit less than three months or six months after hiring) are compared on a list of trial non-test predictors. Horizontal weights in percentages are derived for each category of personal description: thus, age 24 and under might receive a weight of 33 (meaning that 33 per cent of the long-termers were 24 and under); age 25 and over might receive a weight of 67 (meaning that 67 per cent of the long-termers were 25 or over). The several items included in the analysis —marital status, number of dependents, and the like—are treated in the same way.

Application blank items have been analyzed for relation to tenure of women salesclerks in a large department store in a study reported by Mosel and Wade.[15] This particular department store was concerned with the excessively high annual turnover rate—approximately 79 per cent, excluding temporary employees. The department store calculated that it cost between $100 and $150 to train an employee. If five hundred employees left the store before reaching a break-even point in sales volume, the company estimated that it lost, at a conservative estimate, $50,000 in training expenditures alone, not to mention the high selling cost of the resulting sales force, the indirect costs, and the loss of customer good will. The company's break-even point for a salesperson was at least six months; this duration of employment was necessary before the employee returned the training investment.

An item analysis was made in an effort to identify potential short-termers at the time of hiring. Application blanks for 85 short-termers and 162 long-termers, representing nearly all departments in the store, were selected from the company's files for the 1948 fiscal year. The long-tenure group was defined as those employees who remained on the job over a year,

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[15] Mosel and Wade, A weighted application blank for reduction of turnover in department store sales clerks, *loc. cit.*

and the short-term group was defined as those who had remained on the job less than six months.

Twelve items were found to discriminate significantly between short-term and long-term salespersons: [16] age, years of formal education, years of previous selling experience, weight, height, time on last job, time on next to last job, domicile, principal selling experience, number of dependents, marital status, and time lost on job in last two years. Weights were assigned by a horizontal percentage method similar to that already described. Then by using Strong's Tables of Net Weights the percentage differences were changed into scoring weights.[17]

Here is a picture of the ideal long-tenure salesperson as found for this particular company according to Mosel and Wade: she is from 35 to 54 years of age, is not over 62 inches in height, is over 126 pounds in weight, has not more than 12 years of formal education, is widowed, keeps house (avoid those living with parents), has one to three dependents, has five years or more of previous selling experience or at least one year of nonclerical experience, and has no lost time on last job. The application blank could be scored on these items. If management had hired only those who obtained a total weighted score of 70 or above, 77 per cent of the long-tenure employees would have been retained, while only 14 per cent of the short-tenure employees would have been accepted. This means that with a cut-off score set at 70, 86 per cent of those so eliminated would have left the job during the first year (see Table 10).

Mosel and Wade recommend that the weighted application blank be used in two different ways: by scoring it in the manner described, using a cut-off score to hire the greatest possible proportion of long-tenure applicants; and by making it a part of a standardized interview.

In this method no scoring is required since the items are displayed in a special interview form for use on a multiple cut-off basis. Arranged in order of validity, the items are followed by four columns representing different standards of selective rigor. The first column lists for

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[16] The Chi-square test was used as a measure of significance of difference.

[17] Edward K. Strong, Jr., An interest test for personnel managers, *Journal of Personnel Research, 5:* 1926, 194–203. (This journal may be listed in libraries under its present title, *Personnel Journal.*)

TABLE TEN

PERCENTAGE OF LONG- AND SHORT-TENURE SALESCLERKS
ACCEPTED AT VARIOUS CUTTING SCORES
(*N = 183*)

CUTTING SCORE	LONG TENURE %	SHORT TENURE %
90	9	1
80	42	8
70	77	14
60	90	27
50	97	45
40	99	72
30	100	92
20	100	98
10	100	100

Source: James N. Mosel and Richard R. Wade, A weighted application blank for reduction of turnover in department store salesclerks, *Personnel Psychology, 4:* 1951, 181.

each item the response category having the highest weight. The second column gives the response category having the next highest weight, etc. The fourth column lists the response categories characteristic of short-tenure employees. Categories having no discrimination value do not appear on the form. By questioning the applicant, the interviewer merely checks each item in the appropriate column. If all checks fall in the first column the applicant has passed the highest selection standard; if one or more checks occur in the second column but none in the third she has passed the second standard. If one or more checks fall in the fourth column the applicant should be rejected. In this manner no scoring is required; at the end of the interview the interviewer can make a hiring decision without reference to tables merely by inspecting the pattern of check marks.[18]

These authors have used this check list in a second department store in the same city in order to determine how well the scoring weights applied to

[18] Mosel and Wade, A weighted application blank for reduction of turnover in department store salesclerks, *loc. cit.* Reprinted by permission of *Personnel Psychology.*

the personnel of another company. The second store was somewhat similar to the first one, although the working conditions and the procedures of the personnel department appeared to be somewhat different. The personnel records for the second store furnished information on only six of the personal data items of the first store: years of education, domicile, age, marital status, number of dependents, and type of previous experience. Two other items were available; these were salary on previous job and husband's occupation. In this situation, the long-term group consisted of one hundred salaried employees with six to twenty months of service and still on the active payroll at the time. The short-term group consisted of one hundred employees who had been hired during the previous six months but had voluntarily resigned.

Only three of the available items were found to be discriminating in the second store. These items were the same ones which were most valid in the first store: age, number of years of education, and domicile. The total application blank scores based on these three items showed validity.[19] The other three items (marital status, number of dependents, and type of previous experience) did not discriminate between long- and short-tenure employees in any respect. This illustrates and verifies the contention that factors valid in one situation may have no validity in a second situation, no matter how similar the jobs appear to be.

Tiffin *et al.* have reported the analysis of several personal data items by means of the significance of the difference between the long- and short-tenure groups.[20, 21] In an optical company they examined records of twenty-

[19] Technical note: A tetrachoric coefficient of correlation was obtained by dichotomizing the personal data scores at their median and the tenure variable at six months. The tetrachoric coefficient was 0.41; the Chi-square index computed from this fourfold table was 12.03, indicating a very significant difference in the score-distributions for the long- and short-tenure employees.

[20] Joseph Tiffin, B. T. Parker, and R. W. Habersat, The analysis of personnel data in relation to turnover on a factory job, *Journal of Applied Psychology, 31:* 1947, 615–616.

[21] It doesn't matter much which way the analysis of such data is reported. There are several methods used in the studies reported in this book, usually the horizontal percentage method of weighting items, the correlation of the item with the criterion, or some measure of the significance of the difference between two groups such as a *d*-value, Chi-square, or a critical ratio. The advantage of the horizontal percentage method is its simplicity and the fact that it needs no computing diagrams for interpretation. To interpret the magnitude of percentage differences between two groups, a nomograph is desirable, such as the one for determining *d*-values by C. H. Lawshe in

seven employees still on the job nine months after employment (long-tenure employees) and sixty employees who left within three months after employment (short-tenure employees). Their findings are reported in Table 11.

TABLE ELEVEN

ANALYSIS OF PERSONNEL DATA FOR LONG- AND SHORT-TENURE EMPLOYEES HIRED FOR A SPECIFIC FACTORY JOB

PERSONNEL DATA	LONG-TENURE EMPLOYEES (9 MONTHS OR OVER) n = 27	SHORT-TENURE EMPLOYEES (UNDER 3 MONTHS) n = 60	DIFFERENCE BETWEEN "LONG" AND "SHORT" GROUPS	CRITICAL RATIO # [c]
Age	30.8 years	25.7 years	5.1 years	4.84 [a]
Years of education	9.7 years	10.6 years	0.9 years	2.04 [b]
Height	68.6 inches	69.1 inches	0.5 inches	0.14
Weight	163.4 pounds	158.3 pounds	5.1 pounds	1.16
Marital status (% married)	59.0	37.0	22.0	1.95 [b]
Number of dependents	1.68	0.72	0.95	3.01 [a]

a Significant at 1% level or less.
b Significant at 5% level or less.
c Critical ratio is a statistical measure of the significance of the difference between two groups. Generally, it must be about 2.00 or higher to be significant.

Source: Joseph Tiffin, B. T. Parker, and R. W. Habersat, The analysis of personnel data in relation to turnover on a factory job, *Journal of Applied Psychology, 31:* 1947, 616.

The results show quite conclusively that, at the time of employment, employees who stay at least nine months on the job are older, have had less formal education, are more frequently married, and have more dependents than employees who leave the job prior to three months. In hiring for this job in the existing labor market and under the general conditions prevailing when this investigation was conducted, employees

Principles of personnel testing (New York: McGraw-Hill Book Company, Inc., 1948), p. 187.

should be sought who are at least 30 years old, have not finished over 10 years of formal schooling, are married, and have at least one (and preferably two or more) dependents.[22]

In the Lockheed Aircraft Corporation, as part of a larger research program on the "relationship of certain aspects of wages of 'money' to certain aspects of the employee's 'work,' "[23] Stockford and Kunze found that variables related to earnings had most to do with whether or not the employee stayed with the organization. They combined the twelve most discriminating variables from the application blank into a weighted composite score; average rate of pay for the most recent twenty-four months of regular employment just prior to Lockheed employment, pay rate of last regular job prior to application at Lockheed, relation of [the first two variables] to the Lockheed hire rate, employment status when interviewed (unemployed, student, military service, employed), number of times moved in most recent two years, marital status, number of dependents, number of months lived in southern California, age, number of years of education, number of months of unrelated training, and total number of months of work experience. The total weighted scores possible from the variables ranged from —20 to +20. The average of the "actives" (the nonterminating group) was +4.1, while the average score for the terminees was —2.1 (see Figure 45). The difference between the scores of these two groups is statistically significant.[24]

One of the more interesting aspects of their analysis concerned the relationship between wages and turnover. Figure 46 shows graphically what they found. The turnover group showed a history of low-paid employment during the last two years before coming to Lockheed, but on the job just prior to Lockheed's this group had had a relatively high rate of pay. In contrast, the non-turnover groups showed much less variation in wages. Stockford and Kunze showed that "as a group, those whose rate of pay over the two years prior to Lockheed showed a marked increase, necessitating a rate reduction upon entering Lockheed, are more apt to terminate voluntarily than are those

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[22] Tiffin *et al., op. cit.,* p. 616. Reprinted by permission of the *Journal of Applied Psychology.*

[23] L. O. Stockford and K. R. Kunze, Psychology and the pay check, *Personnel* (American Management Association), 27: 1950, 129–143.

[24] The critical ratio was 7.7.

who had been earning about the same rate of pay as their Lockheed rate." [25]

In a pharmaceutical company an analysis was made of the turnover among female production workers.[26] These women sat around assembly
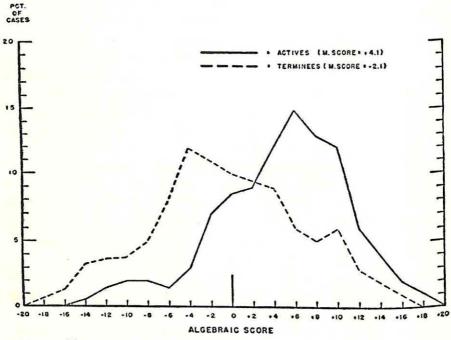
FIGURE 45

FREQUENCY DISTRIBUTION OF SCORES ON WEIGHTED APPLICATION SUPPLEMENT

Source: L. O. Stockford and K. R. Kunze, Psychology and the paycheck, *Personnel* (American Management Association), *27:* 1950, 136.

tables working on pill-loading or inspection operations. The company had been having a considerable amount of turnover in this particular job title, which was selected for analysis. The group of seventy-five long-termers had

[25] Stockford and Kunze, *op. cit.*, p. 137.

[26] Roger M. Bellows and Charles E. Scholl, Jr., Development and evaluation of methods for personnel turnover control, *American Psychologist, 2:* 1947, 338 (abstract); see also Charles E. Scholl, Jr., and Roger M. Bellows, A method for reducing employee turnover, *Personnel* (American Management Association), *29:* 1952, 234–236.

been with the company for one year or more, some of them had been there as long as five years, and all were still employed. The short-term group was composed of seventy-five female production workers who had been with the company anywhere from nine days to not longer than a year and a half; none of them was with the company at the time the study was made.
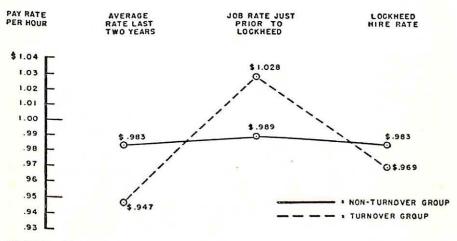
FIGURE 46

LOCKHEED STARTING WAGE RATES COMPARED TO RATE JUST PRIOR TO LOCKHEED AND TWO-YEAR AVERAGE

Source: L. O. Stockford and K. R. Kunze, Psychology and the paycheck, *Personnel* (American Management Association), *27:* 1950, 137.

A personnel data card was devised for collecting information from the application blanks about these two groups of women. On the card there was space for the name, the department in which she worked, the date hired and other items, such as age, marital status, and the like, as well as scores made on psychological tests, and any ratings which had been made of her work for the period of time that she had been there. On the basis of these data, the long-term group was compared with the short-term group. Scholl decided to assign coded values to the different variables, based on examination of the data, to see whether he could develop a score which would discriminate between the long-term and the short-term people. The twelve-minute *Wonderlic Personnel Test* was used as one of the variates: scores between

7 and 17 inclusive were assigned a score of 5 points; if the person made a score on this test of 5 or 6, or 18, 19, or 20, 3 points were awarded; and if the score was below 5 or above 20, no points were given. Age was coded on a similar basis. If the age was 24 years up to 40 years, at last birthday, 1 point was given. If age was less than 24 and over 40 years, at last birthday, no points were given. Concerning marital status, if the person was unmarried, which included widowed, separated, or divorced, 1 point was given; if a person was married, no points were given. The employment record was also scored. If the person had had a good previous employment record showing at least one year of continuous, satisfactory experience in similar routine factory work, and if the person had no office, clerical, or stenographic work, 2 points were given. If there was no good employment record as defined above, including no previous employment, no points were given.

From these tentative values the personnel data card was scored. By a statistical technique [27] each of these variables was analyzed to determine how valuable each one might be for predicting whether or not the person would ultimately be a long-termer or a short-termer in the company. Not all of the variables were found to be valid. The employment record contributed most power in predicting whether or not the person would stay. Marital status was of some help, and the score made on the *Wonderlic Personnel Test* added a little bit to the prediction. Age was not found to be a significant factor in this particular job situation. (A multiple correlation coefficient of 0.46 was found.)

Using the weights for these three items, this scoring system could have eliminated in the employment office 69 per cent of the actual short-term applicants.

Other Correlates of Turnover

The foregoing discussion has pointed out the role of the interviewer in reducing turnover costs by skilled attention to the relation of personal data to turnover. Turnover, however, is related to conditions of work, economic,

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[27] This was the Wherry-Doolittle method for combining tests into a battery of application blank, interview, or test predictors; described in William H. Stead, Carroll L. Shartle, and Associates, *Occupational counseling techniques* (New York: American Book Company, 1940), pp. 245–250.

social, and psychological, not covered in these analyses. In fact, the potential list of turnover correlates has barely been studied. Relationships with tenure may be teased out empirically. The interviewer's analysis of personal variables may be set up as part of a larger company-wide analysis of other variables, extraneous to the interview and the selection process.

Summary

The conditions involved in employee turnover lend themselves to more effective turnover control by interviewers. These control methods may be developed by item analysis procedures. It is desirable that personnel directors, personnel technician-interviewers, as well as members of top management know the nature and cost aspects of employee turnover; methods for the computation of turnover rates by departments and by job families; item analysis methods; and the successful studies that have been reported on turnover control. These facts, methods, and results discussed in this chapter can yield profit to the company, higher satisfaction and morale to workers, and savings to the community.

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NEW KINDS OF ASSESSMENT INTERVIEWS

An increasing amount of experimental research is being conducted for the development and evaluation of three new interviewing approaches. An outgrowth of World War II is the "stress" interview. It emerged as a selection technique for military espionage personnel. The stress interview involves putting the candidate under severe emotional strain in order to observe his reactions.

Recent military personnel research also gave the impetus for improving a second technique, a selection board interview. This is not a new interview technique—in industry and in civil service groups it has been called the oral performance test or panel interview. This interview technique provides a setting in which about five members of a board observe and rate a candidate.

A third recent development is the group interview, in which about six or eight candidates are observed simultaneously in a group discussion situation. If a leader is not designated, this may be called the leaderless group discussion; it has also been called the group oral performance test.

All these new techniques are departures from the traditional type of interview. Instead of one interviewer and one applicant, one interviewer and many applicants may be together, or several interviewers and one candidate, or several interviewers and several candidates. In addition to these possible combinations, there may or may not be a leader appointed in the group discussions. There may or may not be a specific topic assigned for discussion. The conditions for creating stress may include props, tests, or unusual situations. The candidate may or may not know what he is being rated on.

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These new techniques have not been used enough to establish their value for selection purposes. It is hoped that the following résumé of the research done on them will provoke fruitful new advances in methodology and application to personnel problems in business, industrial, military, and government organizations.

The Stress Interview

The stress interview was designed primarily to measure emotional stability under strain. In the United States, the most familiar example of the stress interview was the work of the Assessment Staff of the OSS (Office of Strategic Services).[1] The OSS was a wartime agency set up by the President and Congress to meet certain special conditions of World War II. Its program got underway during 1942 and continued all through the war. Unfortunately, no plans were made for gathering statistical data so that validity or reliability information about the program could be made available. Rather the clinical approach tended to be used.

During World War II over 5000 candidates were assessed by the OSS for such jobs as saboteur, resistance leader, liaison man, propaganda expert. In general, the selection phase of the program lasted but a few days; it required the candidate to go through an exhaustive set of individual and group tests and a series of stress interviews. In addition the candidates participated in several group projects which made severe emotional demands on them. Candidates lived with staff members but the latter were not always identified as such, and frequently acted as candidates in order to observe the characteristic behavior of the others.

Typical of one of the group projects was the so-called Construction Test, given sometime during the morning of the first day. Ostensibly, the purpose of this test was to detect the candidate's ability to direct helpers in building with him a frame structure out of simple wooden materials, something like a giant Tinker Toy set. Actually, the situation was not nearly so peaceful as it first appeared; it was really a test of emotional stability and

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[1] Office of Strategic Services, Assessment Staff, *Assessment of men* (New York: Rinehart & Company, Inc., 1948, 541 pp.). This excerpt and the following are reprinted by permission of Rinehart & Company, Inc.

frustration tolerance. Several other factors, such as energy, initiative, and social relations, were judged during the process.

When the candidate came to the test area, he was given the following instructions by one of the staff members:

> We have a construction problem for you now. We want you to build a structure using the equipment lying around here. Let's see. (*The staff member appears to ponder which of two or three models of different design to use.*) I guess we'll give you this model to copy. (*Staff member picks up the model which is always used from among the others and shows it to the student.*) You see there are short 5-foot and long 7-foot poles lying on the ground. (*Staff member points out one of each size.*) The sides of the frame which you are to build are made of 5-foot poles and the diagonals of 7-foot poles. (*Staff member demonstrates this on the model*). Do you understand? [2]

Other directions of this sort follow. Then he says: "All right, it is now 10:00. You have just ten minutes in which to do the job. I'll call your two helpers." Two helpers came out who, unknown to the candidate, were members of the junior staff of the OSS. One of the helpers always stood around and got in the way and didn't do much of anything or did something on his own when he should have been working on the project. The other helper was always very aggressive, made wrong suggestions, complained and criticized a great deal. The two assistants were secretly instructed not to disobey orders but otherwise to obstruct and annoy the candidate as much as possible in the ten minutes.

The two helpers worked in a number of ways toward this goal. They complained that he didn't ask what their names were; they tried to involve him in an argument or they got involved in their own argument. Sometimes the assistants would follow orders for a while and then they would start tearing down the construction unless the candidate actually told them to stop. On occasion, in order to see whether or not the candidate would become frustrated by seeing the structure collapse right before his eyes, one of the assistants would kick the pieces apart, saying that no sensible person would expect such a framework to hold together unless it was pegged.

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[2] *Ibid.,* p. 102.

Some candidates became so bitter they did not continue. Others who seemed to be fairly effective leaders would start all over again and tell the helpers how to help him get the project finished. In the entire history of the OSS staff assessment program, the construction project was never completed in the allotted time.

Another phase of the screening process was the stress interview. It was designed primarily to test the candidate's capacity to tolerate severe emotional and intellectual strain. The strain was created by rapid and merciless cross questioning under disagreeable conditions with the aim of detecting flaws in a story which the candidate had been given only a few minutes to invent.

One procedure for conducting the stress interview was as follows: At exactly 6:25 P.M. the whole group of candidates was assembled in the classroom and one of the staff said:

> This evening we are going to conduct one of the most important tests of the whole program. What you are to do is simple, but it is necessary for the success of the procedure that you carry out every detail precisely. It is particularly essential that you be completely punctual in following the schedule set for you. Begining at 6:30 you will go one by one into the small room labeled A-13. Each of you in your individual schedules will find the time of your own appointment recorded. In the room will be a clock and a set of directions on the table. You will remain there alone for exactly twelve minutes, reading and carrying out the directions. Are there any questions?

By the time these instructions had been given it was about 6:30 P.M., and at that hour the first candidate went to the little room, where, upon entering, he found the paper on which was written:

· *INSTRUCTIONS FOR RESOURCEFULNESS TEST*
Read these instructions carefully.

The examination you are to undergo is designed to test your resourcefulness, agility of mind, and ability to think quickly, effectively, and convincingly. This is an important test and it is important that you do well. *In twelve (12) minutes report to the basement room at the foot of the stairs.*

The test will measure your ability to establish and maintain a cover story for the situation outlined below. Your cover story must be told convincingly, intelligently, and clearly. The examiners will try to trip you up on your story, to lead you into inconsistencies, and in general to confuse you.

Several students in the past have failed in this test because they forgot or did not understand the directions and requirements. We are listing below the important "rules" of this examination. If you do not remember these rules you will fail.

1. YOUR COVER STORY MUST GIVE A PLAUSIBLE *AND INNOCENT* REASON FOR YOUR ACTIONS.
2. *YOU MUST ANSWER EVERY QUESTION ASKED.* ANSWERS LIKE, "I DON'T REMEMBER," "I DON'T KNOW," "I AM NOT PERMITTED TO DISCLOSE THAT INFORMATION," ETC. ARE NOT PERMISSIBLE AND WILL COUNT AGAINST YOU IN THE FINAL RATING.
3. YOU MUST AVOID BREAKING EITHER PERSONAL OR ORGANIZATIONAL SECURITY IN YOUR ANSWERS. NONE OF YOUR REPLIES SHOULD DISCLOSE YOUR FORMER OCCUPATION, PLACE OF RESIDENCE, ETC.

Here is the situation for which you are to construct a cover story:

A night watchman at 9:00 P.M. found you going through some papers in a file marked "SECRET" in a Government office in Washington. You are *NOT* an employee of the agency occupying the building in which this office is located. You had no identification papers whatsoever with you. The night watchman has brought you here for questioning.

In developing your cover story you may assume that you are clothed in any manner you wish.[3]

After the twelve-minute period the candidate went downstairs and found himself in a room with a strong spotlight focused on him. Behind the spotlight sat a board of people, members of the staff. He was ordered to sit down and he was forced to sit in the full strength of the beam. He was then examined and cross-examined.

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[3] *Ibid.,* pp. 133–134.

At first, the questions were asked in a quiet, sympathetic, conciliatory manner to invite confidence. After a while, the examiner began to get more dramatic and seized upon any slip of the tongue or evidence of forgetfulness as a suspicious sign. He might even roar or speak with sharp sarcasm. The questions gradually came more rapidly and went quickly from one topic to another. The candidate was asked about exact dates, hours, addresses, telephone numbers, names of people involved in his story. He might be asked about his past life, profession, place of residence, and so on. Every effort was made to keep him tense. He was not allowed to relax. He had to sit up in a hard chair. He was not allowed to smoke. He was ordered to keep his legs uncrossed, and to keep facing the light. All of this served to make him more and more uncomfortable. After a number of minutes of this kind of questioning, the staff summarized the interview by saying that he had failed the test and then maintained silence while his reaction was observed. When the candidate left, the staff observers who had been interrogating him rated him on several personality variables. The members of the staff were agreed that the stress interview could be developed into an extraordinary instrument for accomplishing three important purposes simultaneously: selecting the most suitable person for important jobs; advancing the understanding of personality; and training clinical psychologists and psychiatrists.

The essentials of a system of assessment which they advocated are

1. *Social setting:* The whole program is conducted within a social matrix composed of staff and candidates, which permits frequent informal contacts and, therefore, many opportunities to observe typical modes of response to other human beings.

2. *Multiform procedures:* Many different kinds of techniques are employed, running all the way from standardized tests to uncontrolled situations, special attention being given to the interview, to projective techniques, and to performance tests.

3. *Lifelike tasks:* Assessees are given lifelike tasks in a lifelike environment: the tasks are complicated, requiring for their solution organization of thought and high integrative level and some of them must be performed under stress in collaboration with others.

4. *Formulations of personality:* Sufficient data are collected and sufficient time is available to permit conceptualization of the form of

some of the chief components of the personality of each assessee, this formulation being used as a frame of reference in making recommendations and predictions.

5. *Staff conference:* Interpretations of the behavior of each assessee are discussed at a final meeting of staff members, and decisions (ratings and recommendations) are reached by consensus.

6. *Tabulation of assessments:* The formulations of personality, the ratings of variables, and the predictions of effectiveness are systematically recorded in a form which will permit statistical treatment and precise comparisons with later appraisals.

7. *Valid appraisal procedures:* Special attention is devoted to the perfection of appraisal techniques, so that reliable measures can be obtained of the validity of each test in the assessment program and of the ratings of each variable.[4]

Freeman has used the stress interview to test stability and poise.[5] He makes the suggestion that if it is used for selection, the examining board members should be as nearly as possible like the kinds of persons who would later judge performance in the actual job situations. Unless a candidate's personal characteristics will permit him to be acceptable in a particular social milieu, his special abilities may have little practical value.

Freeman and others have said about the stress interview:

> The stress interview is designed to select those individuals, who, when highly aroused internally, are able to maintain such intelligent control over their behavior as to be judged "poised," "master of the situation," "resourceful," and "well-adjusted." It appears that some individuals manifest these attributes better when under stress than when under nonstress conditions. Another important aspect of the personality structure is the rate of recovery in outward poise and higher-order of control of total behavior following removal of the stress situation. Adequate control of self during stress and quick recovery of higher-order adjustments after stress is removed are the qualities sought in candidates selected by the stress-interview technique.[6]

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[4] *Ibid.,* p. 464.

[5] G. L. Freeman, Using the interview to test stability and poise, *Public Personnel Review, 5:* 1944, 89–94.

[6] G. L. Freeman, G. E. Manson, E. T. Katzoff, and J. H. Pathman, The stress interview, *Journal of Abnormal and Social Psychology, 37:* 1942, 429. Reprinted by permission of the *Journal.*

Stress is defined "as that aspect of the interview situation in which the individual, highly motivated to be successful, is placed on the defensive and deliberately confused as to his progress."[7]

Freeman described a stress interview experiment for the selection of traffic officers.[8] A brief period of bland questioning is given to put the applicant at ease. This is said to enable the examiners to observe the individual's verbal and intellectual behavior under fairly relaxed conditions. He is next given an apparatus test so that his motor performance may be noted under relaxed conditions. These test scores are recorded but are not used as evidence for selection.

Stress questioning begins abruptly. The examiners change from friendly interest to open hostility, belittling the candidate's performance, even questioning his character. The candidate is placed immediately upon the defensive. He must answer questions of information and judgment similar to those that he answered in the initial friendly sessions, but he is now under a barrage from several examiners at once. His performance is compared point by point with the behavior first observed. He is then told that he may be given another chance to improve his performance on the apparatus test. Instructions (which may be given over earphones) are now interspersed with stories, irrelevant comments, and commands. When he attempts to follow commands and presses buttons he receives an electric shock.

The final phase of the stress interview is a relaxed, informal situation. He is asked questions about how much he remembers of the earlier problems in the interview. He may be offered a cigarette while he is casually questioned. During this period, the examiners are observing how quickly he returns to a poised behavior. He also has the opportunity to save face and restore his confidence so that he can view the interview trial more objectively.

The members of the examining board for the selection of traffic officers were to observe specifically these six qualities: emotional stability, dominance, physical poise, resourcefulness, speed of adjustment, and egocentrism. A five-point rating scale with descriptive phrases was used to rate these

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[7] *Ibid.*, p. 430.

[8] Freeman, Using the interview to test stability and poise, *loc. cit.*, p. 92.

qualities after each interview. Examiners were then asked to make an over-all evaluation of the qualities at the end of the experiment. Reliability esti-mates were made in the form of correlation coefficients which ranged from 0.72 to 0.86. Validity checks were made between interview ratings for one group and order-of-merit rankings by officials familiar with the records made by the candidates in previous positions. Correlation between the total rating score and this criterion was 0.50; between nonstress ratings and the criterion, 0.74; between stress ratings and the criterion, 0.33. These correlations, which are amazingly high, suggest that judgments of behavior based on a brief stress interview tend to agree with judgments made by persons well acquainted with the candidate's job performance.

German military psychologists, who have done pioneering work in this area, have favored the use of props such as the apparatus tests as a means of introducing stress into the situation.[9]

The Group Interview

The group interview is known by several names: the leaderless group discussion technique, unsupervised group discussion, group oral performance test, and the group interview test. It is similar in many respects to a round-table discussion. About six or eight participants sit in informal surroundings and discuss either an assigned topic or a topic of their own choosing about which all participants are reasonably well-informed. The group may or may not have a leader appointed. The length of interviews differs, ranging from a half-hour to three or four hours. Company selection officers or a board of raters observes the group. Usually the raters do not participate in the dis-cussion but sit near by or behind the group.

After the discussions are terminated, the judges prepare their evalua-tions of the participants. Ratings are made on the same diversity of qualities noticed in the traditional individual interview. Company representatives who observed candidates in group interviews thought that the leaderless group discussion facilitated observations on such factors as initiative, ag-gressiveness, poise, adaptability to new situations, tact, ability to get along

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[9] H. L. Ansbacher, German military psychology, *Psychological Bulletin*, 38: 1941, 370–392.

with people, group acceptability of the individual, social awareness, alertness to group attitudes, feeling for the interaction taking place, ability to control oneself, leadership, public-speaking ability, reaction in front of a group, and the like.[10] In other words, according to them, many of the traits popularly ascribed to leaders were being measured.

The trend toward the group interview appears to be a little older historically than the stress interview.[11] The group interview may be traced back to the German military psychologists who first recognized that it might be useful for the assessment of leaders, particularly military officers. The idea seems to have originated with J. B. Rieffert, who directed German military psychology from 1920 to 1931; he said that he used it at the dinner table around 1925 for the first time. Ansbacher [12] and Farago [13] reported that the German psychologists hoped from "assessing the whole personality" of the individual in real life situations to select the most apt and efficient officers. Their use of a group interview (similar to the stress situation just described) seemed to them to be valid for the purposes of selecting the most likely officer candidates. The German psychologists generally did not bother with reliability and validity studies of their procedures. The program appears to have been discontinued for military purposes in 1941 so far as the Germans were concerned. Germany is again using it today for civilian selection programs.

British military groups adopted and modified the techniques of the German psychologists. In fact, the British selection program seems to be the first one in which the technique of the leaderless group discussion was used. Fraser has described the adaptation of the selection board technique used by the British Army to the selection of trainees for senior management positions in medium-sized coal distribution companies.[14] Candidates were lodged in a hotel; after taking several intelligence and temperament tests, they sat

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[10] Bernard M. Bass, Selecting personnel by observation, *Personnel* (American Management Association), *26:* 1950, 270–271.

[11] See the review of the history by H. L. Ansbacher, The history of the leaderless group discussion technique, *Psychological Bulletin, 48:* 1951, 383–391.

[12] Ansbacher, German military psychology, *loc. cit.,* pp. 370–392.

[13] L. Farago (ed.), *German psychological warfare* (New York: Committee for National Morale, 1941, 133 pp.).

[14] J. M. Fraser, The group method of selecting executives, *Personnel* (American Management Association), *26:* 1949, 50–53.

around a fireplace in the evening and conducted an informal discussion on a topic of common interest, paying no attention to a psychologist and two members of company management who were also present in the room. On the next morning they were given two hours to discuss a specially designed practical business problem, such as coal distribution. At this time, the three observers reached a decision as to which candidates ought to be offered jobs. No measure of validity was mentioned nor were any statistical data gathered concerning the reliability of the selection board ratings.

In summarizing some findings on the selection board procedure, used on about twenty occasions in 1946, Fraser formed several hypotheses about it:

1. The selection board procedure is best for selection of executives for small industries, partly because executives must be socially acceptable to co-workers.

2. The optimum number of candidates seems to be eight, but, within the limits from six to ten, the group interviews seem to be workable.

3. Members of the board have expressed feelings of confidence on their final choices.

4. The reactions of the candidates participating in the group interviews have been favorable to the group interview selection method.[15]

According to a survey by Fields of 190 agencies that replied to a questionnaire sent out to city, state, and federal civil service groups and other personnel bodies, more than one fifth stated that they were using the group oral interview.[16] These agencies were distributed as follows: federal or national civil service agencies in the United States and elsewhere, 5; United States Navy, 3; United States Army, 1; state civil service commissions, 13; state personnel boards, 1; county civil service, 2; municipal civil service commissions, 9; municipal personnel bureaus, 10.

All of these agencies reported satisfaction with the group oral interview. The findings of Fields may be briefly summarized. He points out that the

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15 J. M. Fraser, New-type selection boards in industry, *Occupational Psychology,* *11:* 1947, 170–178. Reprinted by permission of the National Institute of Industrial Psychology.

16 Harold Fields, An analysis of the use of the group oral interview, *Personnel* (American Management Association), *27:* 1951, 480–486.

conditions for the group interview are varied and that not sufficient research has yet been reported to determine the optimum way of doing. His survey reports the present practice in the interview, not what is necessarily the best practice.

For the selection of a chairman for the group oral interview, twenty-one of the forty-four agencies that use the group interview make no provision at all, permitting discussions to proceed under their own momentum. The other twenty-three do select chairmen, but the method of selection varies. Eleven of the agencies designate a member of the examining panel as a chairman. Five agencies leave the selection up to the candidates. Seven agencies assign someone outside, either the candidate or an observer who is preferably a specialist well informed on the topic to be discussed and who is unknown to the participants.

The maximum number of candidates in any one group oral interview varied from three (one agency) to fifteen (one agency). The most frequently reported number was eight (in seventeen agencies), although six was also frequently reported (in ten agencies). The number of candidates was related to some extent to the time allotted for the group interview. The time varied between a half-hour and four hours. Fifteen of the agencies used an hour for the interview; eight used two hours.

The number of members on the examining panel varied from three to six. Twenty agencies used no more than three members, eight agencies used four, eleven agencies used five, and five agencies used six.

Some of the agencies use both the individual and the group interviews. They indicated that the two techniques seem to supplement each other, that one measures something the other does not. Twenty-four of the agencies give both tests to all candidates, fifteen use only the group test, and five have varying policies.

Quantitative data with which to evaluate the group interview are not profuse. While the number of agencies and individual firms trying the technique is increasing, few of them have gathered data to permit checks on the reliability and validity of the procedure. The Germans, as was mentioned, seemed to care little for either reliability or validity. Face validity, the apparent usefulness of the technique, has been noted in many write-ups.

Bass has undertaken quantitative approaches to the problem. He has

compared ratings on sixty-four candidates who participated in a leaderless group discussion with their ratings from individual interviews. The raters for both types of interviews were company representatives from the Mutual Life Insurance Company of New York and from the Burroughs Corporation, both seeking sales trainees among graduating students at The Ohio State University. Another group of raters was from the Procter and Gamble Company, who were seeking management trainees. The candidates were observed by two company observers in an eight-man group discussion and were then individually interviewed by two other company representatives. The raters observing group discussions correlated 0.67 with each other's ratings of whether or not they would want to hire the candidates. The individual interviewers' ratings correlated 0.59 with each other. Bass's conclusion from these data: "For all intents and purposes it seems fairly safe to say that over-all measurements made on the basis of one 30-minute leaderless group discussion are as reliable as over-all measurements made on the basis of eight individual standardized interviews by well-trained and experienced interviewers." [17]

Wagner compared the group interview situation with individual interviews for securing personal information.[18] The interesting part of his analysis was that considerable detail was requested, making the length of the interview an item of some expense. The group interview took about one fourth as long as the individual interview to obtain equally good reports. Furthermore, Wagner felt that there had not been unfavorable reactions either to the group situation or to the amount of writing required.

The United States Civil Service Commission conducted an experiment in 1949, comparing the group oral performance test with a written test. The criterion used was supervisors' ratings to determine the validity of the two techniques; it should be noted that the reliability of the criterion was only 0.65, a somewhat low reliability which tends to limit the validity coefficients which could be obtained for the two techniques. The subjects were drawn from shipyard shops: outside machine workers, inside machine workers, elec-

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[17] B. M. Bass, Comparison of the leaderless group discussion and the individual interview in the selection of sales and management trainees. Multilithed Doctoral Dissertation, The Ohio State University, 1949.

[18] Ralph Wagner, A group situation compared with individual interviews for securing personnel information, *Personnel Psychology, 1:* 1948, 93–107.

trical workers, riggers, and laborers. The written test was on supervisory problems and the group discussions were centered about tasks similarly related to the job; the two techniques correlated 0.43.

The average correlation of the supervisory judgment test with the supervisors' ratings was 0.45, for a total of 84 cases. The average correlation of the group oral performance test with this criterion was 0.29 for the same number of cases. (Both correlation coefficients were significant at the 1 per cent level.) The author concludes that the written test furnished higher validity with less expense.[19]

One of the interesting findings of Bass's research on group interviews was the relation between how much a candidate talked in the group interview and whether or not the raters wanted to hire him. The actual time each candidate talked was measured and correlated against whether or not the rater himself would have wanted to hire him. This correlation coefficient was 0.65. Bass feels that in his situation the amount of participation was a good index of leadership because of the amount of verbal time necessarily spent by the "leader" in carrying out such self-appointed tasks as organizing, clarifying, summarizing, and the like.[20]

Bass has contributed a number of suggestions for future research on the group interview technique.[21] The total amount of time each participant talked as a measure of leadership is one index he has already studied to some extent. He suggests that the number of words or the total number of responses made might get at the same thing. Kinds of responses by participants could be categorized by an appropriate classification system to see which classifications of participants' behavior are most predictive of success.

Review of the several research studies has not revealed empirical evidence as to how large the group should be. Survey information showed that eight members were most often used; however, five, six, or even ten may be a more satisfactory number to permit maximum social interaction and minimum confusion in observations and ratings as to emergent leaders.

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[19] Milton Mandell, Validation of group oral performance tests, *Personnel Psychology, 3:* 1950, 182.

[20] Bernard M. Bass, Selecting personnel by observation, *Personnel* (American Management Association), *26:* 1950, 271.

[21] Bernard M. Bass, The leaderless group discussion technique, *Personnel Psychology, 3:* 1950, 30–31.

Likewise, the total length of the interview has not been appraised in a systematic way—some have used thirty minutes, one company reported allowing the group four hours. Perhaps equally reliable and valid information can be squeezed out of the group situation in a shorter time. The number of raters necessary for reliable ratings has not been determined.[22]

The Board Interview

In America a departure from the traditional interview situation was woven into board evaluations of Army officers. In 1945, when considering the selection process for determining which officers should be retained in the regular postwar Army, the members of the project staff of the Personnel Research Section of The Adjutant General's Office were in complete agreement in doubting the value of the traditional type of Army interview.[23] They felt that more objective procedures than the interview could be used to gather biographical or personality information about the candidate.

The basic ideas controlling the development of the new interview procedure were these: (1) it must make a distinctive contribution, in terms of added statistical validity, to the officer selection procedure; (2) it must be practicable; and (3) it must be as objective as possible. The interview must provide a means for five board members, strangers, to evaluate a candidate's ability to deal with people. The procedure was so set up that board members observed the behavior of the candidate, and described their observations, before integrating their ratings into an evaluation of the candidate's ability to deal with people. The overt behavior which could be observed during such an interview was defined and conversational situations to elicit this kind of behavior were developed. The interview board members had no other data or records on which to base their evaluations of the candidate; they were

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[22] Two works on the reliability of the group interview may be of interest. See B. Bell and R. L. French, Consistency of individual leadership position in small groups of varying membership, *Journal of Abnormal and Social Psychology*, 45: 1950, 764–767; and Boris Semeonoff, On the reliability of the leaderless group discussion technique, *Psychological Bulletin*, 49: 1952, 540–541.

[23] Personnel Research Section Staff, *Development of an Interview Procedure for Use in Officer Selection* (PRS Report No. 705; Washington, D.C.: The Adjutant General's Office, 1945, 30 pp.).

to judge his reactions in the social situation. (It should be noted that the board interview was only a portion of the selection process.)

The board members could use problems as a basis for talk with the candidate. These problems were set up so that they called forth the kind of behavior which could be observed and recorded by the board. Here is a problem relating to the handling of a "difficult" officer: "Let us assume that one of your fellow officers, who works under your direction and is of the same rank as you, is inefficient, lazy, and inclined to pass the buck. How would you go about straightening out the difficulty?" [24] It is obvious that there is no right or fixed answer to this kind of problem question, but there are some solutions which are better than others. After the candidate had described a course of action, the board members would ask questions in order to elicit further behavior responses they had not yet observed. Some of the probing questions are the following:

> "Would you take a different approach if the officer had formerly been all right? What approach?"
> "What would you do if he were a close friend?"
> "Suppose he resented you personally?"
> "Under what circumstances should you keep hands off?" [25]

Here is another problem question:

> "Your various contacts with officers and enlisted men in the Army have given you grounds for making some judgments about the qualities of leadership in the Army. Just what qualities of leadership do you think are most important for the Army?" [26]

Probing questions include:

> "How would you describe the different levels of leadership, from poor to outstanding?"
> "How would you distinguish between a real leader and an officer who leads solely because he holds rank?"
> "How does the best type of officer go about generating and maintaining good morale?"

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[24] War Department, The Adjutant General's Office, *Conduct of the interview* (Preliminary manual; WD AGO PRT–403; 1945), p. 6.

[25] *Ibid.*

[26] *Ibid.*

"In what respects do the qualities of leadership differ in officers and civilians?"

After trying out such exploratory techniques as necessary, it was found by the project staff that adequate and sufficient information could probably be obtained after a thirty-minute interview; an additional ten minutes would be required to describe and rate the candidate on the work sheets provided.[27]

The five board members rated the candidate independently after he left the room. The forms they used are presented in Figures 47, 48, and 49. During the interview or immediately thereafter they used Work Sheet A (Figure 47) as a check list to rate the candidate's behavior and the impression he made. Each item was scored + (favorable), — (unfavorable), or 0 (neutral). Work Sheet B (Figure 48) was completed just after the interview. It consists of about two hundred adjectives which could describe the behavior of candidates in this kind of interview. The items had been carefully selected and sorted into five levels of júdged merit. They provided a checklist record of the impression made by the candidate and served as a general guide for completing Work Sheet C (Figure 49). Independently each board member used Work Sheet C for his evaluation of the candidate's over-all ability to deal with people in two types of Army assignment: in a line or troop command assignment or in a staff or headquarters assignment. These ratings were not altered after the board's discussion of the candidate.

The reliability of ratings prepared on this interview form was 0.87. In a sample of 1359 officers, a validity coefficient of 0.37 was found between the interview rating and an elaborate criterion of over-all efficiency on the job as rated by officers who knew the candidates' work performance well. When the interview appraisal was added to other selection measures available on each candidate, the multiple regression coefficient of correlation was found to have been raised from 0.62 to 0.65.

Morse and Hawthorne sought to determine how reliably the members of an oral examination board, or oral interviewing board, could rate individuals who were being considered for positions in the Los Angeles civil

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[27] War Department, The Adjutant General's Office, *Interview blank* (Form 1; WD AGO PRT–402, 1945), p. 1.

A WORK SHEET FOR OBSERVING AND JUDGING CANDIDATE
(To be completed independently by each Board member during the interview, or immediately after)

This work sheet is designed to tell what to look for in the behavior of the candidate, and to provide a record of the impression his behavior makes on the Board member. The symbols +, O, and —, appear after each item. If the candidate's entire behavior as described in the item makes a favorable impression, circle the +. If the candidate's entire behavior as described in the item makes an unfavorable impression, circle the —. If his behavior does not impress you one way or another, circle the O. A complete observation must be made of each item separately during the interview. (It is left to the Board member to determine the way in which any instance of observed behavior affects his total impression of the candidate.)

I. JUDGING BEARING AND MANNER

1. HOW HE LOOKS
   Observe: Dress, features, carriage and stature . . . . + O —
2. FACIAL EXPRESSIONS
   Observe: Movements of mouth, eyes, eyebrows and forehead, as shown in smiling, laughing, frowning, and grinning, while listening and talking . . . . . + O —
3. GESTURES
   Observe: Movements of the head, hands, arms and shoulders . . . . + O —
4. SET OF BODY AND LIMBS
   Observe: Posture in leaning, stretching, twisting, swaying . . . . + O —

II. JUDGING VOICE AND LANGUAGE

1. VOICE QUALITY
   Observe: Resonance, nasal and muffled qualities, pitch and loudness, inflections, slurring, affected delivery . . . . + O —
2. WORD SELECTION
   Observe: Use of simple English, technical words, colloquialisms, slang . . . . . + O —
3. USE OF LANGUAGE
   Observe: Clarity and construction of sentences, clauses and phrases, narration and description, coherence, and directness . . . . + O —
4. EMPHASIS IN SPEAKING
   Observe: Use of pauses, modulation, changes in rate, changes in pitch, changes in loudness, clipping and accenting of words . . . . + O —

III. JUDGING OTHER PERSONALITY CHARACTERISTICS

1. BODILY COMPOSURE
   Observe: Presence or absence of unnecessary movements, irregularities in breathing, excessive perspiration, false laughter, tremors of face and hands, general agitation, or nervousness . . . . + O —
2. SPEECH CONTROL
   Observe: Presence or absence of excitability as shown in increased rate of speech, rising inflections, blocking, slips, repetition, verbosity, stilted phrasing, or general excitement . . . . + O —
3. EFFORT TO UNDERSTAND
   Observe: Requests for clarification, attempts at definition, questions of verification . . . . + O —
4. RESPONSIVENESS
   Observe: Readiness of replies, amount of explanation, limitation of replies, not answering, effort to satisfy . . . . + O —
5. OBJECTIVITY
   Observe: Discrimination between fact and opinion, making and accepting corrections, acceptance and rejection of superstitions, use of qualifications, hedging . . . . + O —
6. REASONABLENESS
   Observe: Leaning on authority, bluffing, avoiding commitments, holding to previously stated opinion, consideration of opinion other than his own . . . . + O —

FIGURE 47

AN INTERVIEW BLANK DEVELOPED FOR RATING OFFICERS FOR RE-TENTION IN THE REGULAR ARMY. WORK SHEET A: FOR OBSERVING AND JUDGING CANDIDATE

Source: The Adjutant General's Office, War Department.

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B WORK SHEET FOR DESCRIBING CANDIDATE
(To be completed independently immediately following interview)

Describe candidate by circling all adjectives which apply to him under each of the three major classes, beginning at the left and continuing through to the right. This work sheet is for the purpose of making a record of the impression made by the candidate, and should be used only as a general guide to the completion of Work Sheet C.

I. DESCRIBING BEARING AND MANNER

cocky	awkward	amiable	appealing	agile
colorless	eccentric	coordinated	animated	arresting
disordered	flabby	cordial	attractive	cultivated
droopy	haughty	courteous	authoritative	dignified
fawning	homely	erect	clean-cut	forceful
forbidding	immature	neat	lively	immaculate
listless	jerky motion	normal looking	quick-moving	impressive
sissified	meek	orderly	quick-reacting	polished
slipshod	odd	respectful	relaxed	powerful
untidy	posed		smooth motion	vigorous
weak	retiring			well-bred
	shy			
	slouchy			
	slow motion			
	stiff			
	swaggering			
	wooden			

II. DESCRIBING VOICE AND LANGUAGE

deceptive	ambiguous	careful	candid	brilliant
dissociated	artificial	civil	condensing	clever
doleful	blunt	coherent	imaginative	compelling
dull	dogmatic	conventional	investigative	decisive
evasive	exaggerated	definite	nimble	eloquent
haggling	flattering	direct	objective	enthusiastic
"idea-less"	gabby	frank	painstaking	fluent
illogical	halting	grammatical	persuasive	original
inarticulate	hasty	pleasant-spoken	resourceful	precise
incoherent	hazy	polite	tactful	
indecisive	jargony	sensible	thorough	
mumbled	laborious	sociable		
oily	sing-songy	tolerant		
padding	slow			
poky	tedious			
superficial	undetailed			
	ungrammatical			
	verbose			

III. DESCRIBING OTHER PERSONALITY CHARACTERISTICS

apathetic	anxious	approachable	adept	adroit
bewildered	appeasing	calm	appraising	aggressive
bluffing	argumentative	capable	broad-minded	alert
bored	bothered	cautious	determined	analytical
bossy	changeable	collected	effective	commanding
fearful	complacent	communicative	firm opinion	confident
flustered	echoing	controlled	flexible	indomitable
indifferent	excited	deliberate	observant	inventive
insecure	fencing	easygoing	openminded	resolute
intentionless	fidgety	friendly	planful	
irresolute	impulsive	game	spontaneous	
sluggish	inaccessible	good-natured		
stubborn	inelastic	grave		
timid	opinionated	methodical		
uncertain	passive	natural		
	suspicious	patient		
		willing		

FIGURE 48

AN INTERVIEW BLANK FOR RATING OFFICERS FOR RETENTION IN THE REGULAR ARMY. WORK SHEET B: FOR DESCRIBING CANDIDATE

Source: The Adjutant General's Office, War Department.

Candidate _____

Name   Rank   ASN

C WORK SHEET FOR RATING CANDIDATE
(To be completed independently by each Board member)

This work sheet is to be used by the Board member to summarize his description of the candidate by organizing and evaluating, as he sees fit, the relatively specific observations and impressions recorded on Sheets A and B. A five-level scale, as indicated below, will be used for rating. The standard for comparison is the average (usual) officer. Rate the candidate on each of the three classes of behavior (I, II, and III, below) and on his over-all ability to deal with people in two types of Army assignments (IV and V, below). Indicate your rating of the candidate by checking in the preferred box. This record will not be altered during or following the Board discussion of the candidate.

	SUMMARY OF OBSERVATIONS AND IMPRESSIONS			ABILITY TO DEAL WITH PEOPLE	
	I	II	III	IV	V
	Bearing and Manner	Voice and Language	Other Personality Characteristics	In a Line or Troop Command Assignment	In a Staff or Hq Assignment
Unsatisfactory	☐	☐	☐	☐	☐	Unsatisfactory
Passable	☐	☐	☐	☐	☐	Passable
Usual	☐	☐	☐	☐	☐	Usual
Good	☐	☐	☐	☐	☐	Good
Outstanding	☐	☐	☐	☐	☐	Outstanding

Board Member _____

Name   Rank

FIGURE 49

AN INTERVIEW BLANK FOR RATING OFFICERS FOR RETENTION IN THE REGULAR ARMY. WORK SHEET C: FOR RATING CANDIDATE

Source: The Adjutant General's Office, War Department.

service.[28] The candidates had already received high grades on written tests before they were considered by the oral interviewing board, the members of which made independent ratings of a few specific personality traits.

[28] Muriel Morse and Joseph W. Hawthorne, Some notes on oral examinations, *Public Personnel Review, 7:* 1946, 15–18.

The rating board used a form to rate these personal characteristics: appearance, maturity of judgment, ability to get along with others, effectiveness of expression, bearing and manner, alertness, and over-all evaluation of personal qualifications. Each one of these traits was scaled in units of 2 points from 60 to 100, with descriptive terms such as "unsatisfactory," 60–66 inclusive; "inadequate," 68–74 inclusive; and so on up to "superior," 94–98 inclusive; and "outstanding," 100. The reliability of the interview findings was determined by analysis of the ratings of a board of four members, rating 394 candidates for the position of captain in the fire department. The average of two raters chosen at random was correlated with the other two. The correlation coefficient obtained as an estimate of reliability was 0.86.[29] The investigators suggest that this reliability is satisfactory.

Having found that oral interviewing boards rate interviewers fairly reliably, Morse and Hawthorne then sought to study whether the ratings had validity. Now, as in many instances, the criterion used by these workers was in no sense "job success." They sought to use criteria such as written tests, training experience, ratings by a separate board, and the like. The determination of the validity of oral civil service examinations was hampered by the inadequacy of the criteria. The magnitude of correlation, of course, was in part limited by the fact that they were using a group of candidates who had been rather highly selected.

A coefficient of 0.39 was reported when the oral interview board ratings were correlated against performance tests for painters and 0.30 when the interview ratings of the oral interview were correlated against training experience as rated by a separate board.

These investigators summarized their study by saying that the oral interview board is sufficiently reliable. It seems to have a low intercorrelation with tests used in the examination and it is useful in raising the correlation of total test scores with the criterion. They also claim that the oral interview board has justification in terms of its public relations value. It gives the candidates the opportunity to satisfy a well-recognized desire to explain somewhere during the selection process that they are interested in and have qualifications for a particular job.

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[29] The Spearman-Brown formula for double length was applied.

Summary

A considerable amount of experimenting has been done with new approaches to the interview, and the experimenting has been intensified particularly within the last decade. Some of the impetus for these researches came from the special problems of assessing men, problems that were created by World War II. While there has been widespread interest in these new departures because of the urgency of the situation or for other reasons, there is not a large amount of quantitative evaluation of the several new techniques. These techniques can be said to be in their infancy as far as development and evaluation are concerned.

The stress interview, used for the selection of intelligence or counterespionage personnel, was aimed to test emotional stability and frustration tolerance under strain. In some respects this kind of miniature situation paralleled the job duties for which the individuals were destined. Both the tools developed and the ways of evaluating them were unfortunately highly clinical.

The group interview, emerging from the work of German military psychologists, is viewed by many as a technique for appraising leadership. This is not conclusively demonstrated as yet to be an outcome of the group interview but research of this nature is increasing.

The board interview, of which a notable example is its use for the selection of officers for retention in the regular Army, was developed in 1945. It has demonstrated low validity; reliability was as high as that usually accepted for psychological tests. One value of the board interview, as here developed, is that it has manualized procedures with prepared forms for interviewers to use which contain preselected items. Observations and ratings are made independently by the raters. They are guided as to the kinds of behavior, appearance and mannerisms, voice, and the like, which are to be observed and rated.

It is hoped that review of the current status of the research on these new interview trends and the discussion of research problems will stimulate additional development, evaluation, and application of these tools to specific situations.

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Chapter | **FIFTEEN**

MANAGEMENT'S OTHER USES OF THE INTERVIEW

Introduction

In the management of business and industry the interview has many uses in addition to employee selection. It is used by management for placing new and old employees; for passing general communications among employees; for on-the-job training of employees, supervisors, and executives; for handling grievances; for counseling for job orientation and for social and personal adjustment; for giving orders; and for surveying employee opinion and morale.

Some of the facts, methods, and results that have been discussed in connection with the personnel selection interview are pertinent to these other uses. Although it has been shown that the action interview by itself has little validity for selection, it has, nevertheless, persisted as a widely used technique, largely because it furnishes personal contact. It will be noted that each of the other uses described in this chapter yields, to some degree, interpersonal values.

The Placement Interview

The selection interview may be contrasted with the placement interview. In a tight labor market, when employees are hard to get, the placement interview becomes a more important function. Such labor markets exist during war periods when many men are drained off into military service, when

almost any applicant who applies to the company is hired and a job is found for him later. The task of the interviewer becomes one of deciding which of many jobs an employee is best suited to fill.

Not only is placement important, however, when there is such a labor market and the company is trying to hire almost anybody who applies; placement may also be of importance in the reclassification and replacement of employees, as in the case of the dissatisfied worker or the worker who has changed his job skills since he was hired. This is sometimes called horizontal transfer. Promotion is also a phase of replacement.

Another group of employees requiring replacement consists of those who become handicapped in the course of their own work. A man may lose the sight of an eye or the use of a leg or a finger. It is not likely that the company would release him if he has become handicapped on the job. Rather, the company would try to find another position which would better fit him with his particular handicap. It is up to the placement interviewer to match up the minimum specifications for the positions available with the qualifications which the man now possesses.

In placement and replacement, use may be made of the products of the Occupational Research Program of the United States Employment Service discussed in Chapter 4.

Putney has reported on the validity of the placement interview.[1] He described a study made in the Army Air Force in 1943 concerning the assignment of men to training schools. The classification officer felt that some men were being misplaced with consequent loss in training time. When the assignments of men over a period of four weeks were checked it was noted that of those placed by recommendation of the interviewing section 84 per cent were graduated within the prescribed training time, while of the group assigned simply to fill quotas, without interviewing, only 29 per cent finished training school successfully. Training grades at graduation were higher among those who were selected by the interviewing process. Putney pointed out that results such as these could not have been obtained without trained interviewers, most of whom had had at least two years of college and all of whom had been given extensive and continuous training in placement inter-

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[1] Richard W. Putney, Validity of the placement interview, *Personnel Journal*, 26: 1947, 144–145.

viewing. Detailed job descriptions were at hand and many interviewers actually attended the schools to which they were assigning men.
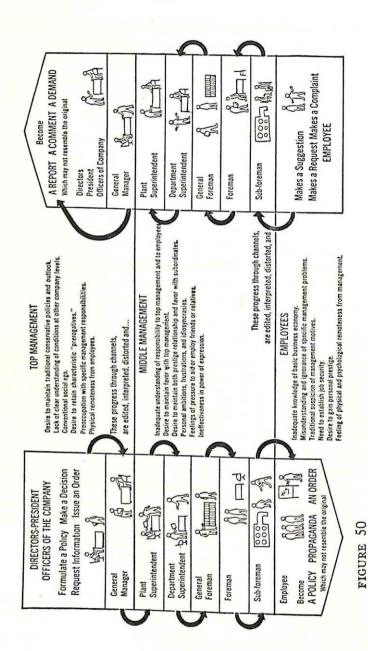
It is to be noted that in each of the several processes—selection, placement, and replacement—the interviewer uses the same tools in matching men and jobs: occupational information and job specifications, judgments about the person obtained from the interview, other employment information available to him, and perhaps nontest and test predictors.

The Interview as a Communications Device

With increases in size, specialization, and complexity of present-day companies, free flowing communication from the bottom up and from the top down among the members of an industrial enterprise has been seriously hampered [2] (see Figure 50). Managements have studied how to get their messages across to the company employees: the problem of unclogging channels of communication. In large companies several media have been utilized: letters from the company president and other members of top management to employees, bulletin boards, the employee manual, and related management publications. Attitude surveys, the grapevine, and the interview are other devices for sharing information within industry.

The role of the interview in communications begins at the time of hiring. During the selection interview, the interviewer passes along information to the prospective employee about company policy, the history and traditions of the company, its size, its organizational structure, and employee rules and regulations. The next step is induction training, which is sometimes conducted formally in groups but more often takes place informally between the placement interviewer and the employee, or between the foreman or supervisor of the operating department and the employee. After the employee is on the job for some little time he will receive verbal communications directly from his supervisor, via the medium of the interview. These communications are subject to all the difficulties and misconstructions that

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[2] Companies are becoming increasingly aware of the area of communications with employees as one of their major responsibilities. To see what devices they utilize, see Alexander R. Heron, *Sharing information with employees* (Stanford University, Calif.: Stanford University Press, 1942, 204 pp.); and Raymond W. Peters, *Communication within industry* (New York: Harper & Brothers, 1950, 198 pp.).

FIGURE 50

SOME FACTORS WHICH DISTORT COMMUNICATIONS

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often arise in the selection interview. Study by foremen and supervisors of the interview and the ways of conducting it efficiently would tend to help in communicating and sharing information with workers.

One of the obligations of top management of an enterprise is to see that its communications get through channels effectively. A considerable amount of planning on the part of top management is required to accomplish this objective. In planning, provision could well be made for training junior executives, supervisors, foremen, and other management people who have direct contact with employees in the art of interviewing. Some companies already have included interviewing among their supervisory training courses.

Not only is it necessary for management to share information with employees; it is also necessary to obtain information from them—communications have aptly been termed "a two-way street." Junior executives and supervisors need to get and record information accurately and summarize it usefully.

On-the-Job Training

Training is generally defined as that process which engenders learning on the part of the individual. Learning is a change in behavior either in improved employee attitudes or in actual job knowledge or skill performance. It is for a definite purpose. Training is a broad area which is tied in with all functions of a business or industrial organization.

Most training is of the informal kind. Perhaps more training takes place informally between supervisors and employees than in the more formal planned courses. This individual training which is continuously going on— conducted by supervisors, foremen, and managers at every level of management—is performed as an interview.

Handling Grievances

Only a small fraction of the total number of grievances in a plant are handled by the formal grievance machinery set up collaboratively by unions and management. In nonunion shops the word "grievance" is not often used.

However, the worker may discuss his problems by interview either with the foreman or with the counselor. Grievance procedure often merges with interview counseling.

Few grievances ever need come to a formal stage in which an impartial umpire is employed. In 1947 the General Motors Corporation disposed of a total of 28,319 known grievances (among 225,000 employees). In addition many more, not counted, were headed off by skillful communications interviewing by foremen. The 28,319 began with interviews between foreman and committeeman. Between them they settled 12,697, or 44.8 per cent of the total, by interview. The next step in the grievance procedure, the shop committee level, settled 41.8 per cent; the next step was the four-man committee which settled 3,591, or 12.7 per cent; the residual 209 cases went to the impartial umpire who settled them, his decisions being final and binding.[3]

Counseling Employees

Modern personnel management makes considerable use of the interview as a counseling device. The history of employee counseling shows that counseling has not been recognized extensively as a regular personnel procedure except during the last decade—the war period emphasized the role of counseling. A few counseling programs were developed during the 1920's. The famous Western Electric Company Hawthorne Plant experiments on morale resulted in part from data gathered by counseling interviews.

Counseling not only yields benefits to employees, through improvement of personal and social adjustment, motivation and job satisfaction, but also enables management to gather additional information of a systematic kind for guidance in the formulation of policies, especially with reference to personnel relations. The interview is used by management today to a considerable extent for these purposes.

"Where do people take their troubles?" This provocative question is the title of a book in which the author exposed the many rackets and frauds made possible simply because people with problems have to tell them to

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[3] Fourth Conference for College and University Educators: Personnel Administration and Industrial Relations (Detroit: General Motors Corporation, 1948), p. 31.

someone—anyone with a sympathetic ear.[4] The kind of sympathy they get ranges from mail-order marriages to communication with their dearly-beloved, long since passed "beyond." The amount of exposure-time and sympathy they receive is often in direct proportion to the amount of money they can be induced to part with. A portion of the book deals with charlatan methods of vocational guidance: head-measuring, face-scrutinizing, and hand-analyzing.

Interviewers can aid maladjusted employees.

McMurry estimates that nearly one third of those gainfully employed are in some degree vocationally or emotionally maladjusted.[5] The label "problem employee" is, according to McMurry, usually a cover-up for maladjustment. As the individual is counseled symptoms of maladjustment such as feelings of suspicion, indifference, or antagonism may disappear.

The supervisor encounters numerous problems which call for counseling with the workers. Consider the following half-dozen examples. These are familiar, day-to-day situations in which counseling is called for.

1. One of the women in the small-parts assembly operation has been complaining lately to her forelady that she gets dizzy easily, that her back aches a lot. She wants to be transferred to a different department which the others say is easier work. The forelady knows that the woman does not like her neighbor on the assembly line and wonders if the complaint really is not related to the personal conflict between them. If so, can counseling help them? Is there a possibility that the woman needs medical attention?

2. A young man, a college graduate, has been working for some time in the body department doing a dirty, greasy job. Lately he has not been keeping up with the others and the foreman has warned him a couple of times to "get the lead out." When he has, the man has replied that he "wasn't hired to do this kind of work." The other men resent the college graduate's remarks. The foreman would like to fire the fellow.

3. A woman in the bookkeeping department has been making mis-

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[4] Lee R. Steiner, *Where do people take their troubles?* (Boston: Houghton Mifflin Company, 1945, 265 pp.).

[5] Robert N. McMurry, *Handling personality adjustment in industry* (New York: Harper & Brothers, 1944, 297 pp.).

takes in arithmetic in her books. These little nuisances have become costly to the company since the woman does not seem to be able to "straighten herself out." She gets flustered when the supervisor points out her errors and apologizes, but soon makes mistakes again. The supervisor cannot understand why the woman—formerly so accurate—cannot be depended upon now. Something seems to be bothering the woman. She appears distracted.

4. Several of the young girls in the packaging department have come to their forelady, complaining about the fellow who trucks away their completed work. He is married, but is always boasting of the many girls he takes out at night. He has asked several of the girls in the packaging department to go out with him. They refuse, saying that he is dirty-talking.

5. A girl who has been with the company for six months still has not made any friends and acts somewhat scared when anyone approaches her in a friendly manner. She brings her lunch and eats by herself in the corner, reading as she eats. She is always very courteous to everyone. Her work is perfect. In fact, she has stayed many nights overtime to make sure that she is caught up and has no mistakes in her work. The girls in her department have given up trying to be friendly with her. Her supervisor would like to advance the girl but feels that she is too shy or withdrawn to be forceful enough on a more responsible job.

6. A man who had been an excellent machine operator for many years was made foreman over his old group. His new job involved a lot of record-keeping and no machine work. After a few weeks on the new job the man began complaining of headaches and was seen taking aspirin frequently. He became irritable with his old friends. One day he came to work after he had had quite a bit to drink. His men turned him in to his boss.

Many more could be described. However, even these few illustrate how widely different are the kinds of problems which may come to a counselor during the day. Some of these problems may require the assistance of other specialists. For example, a physician should be consulted on those cases involving recurrent headaches and complaints of backaches. The shy office girl may be so severely maladjusted that a psychiatrist's help should be sought. The counselor needs to know sources for help outside the company's

own counseling service. He may actually do more harm than good if he passes platitudes to a person needing either medical or psychiatric treatment.

The way an executive in industry handled a troubled worker by interview is reported below. It is taken from an interview recording. The actual conversation is presented on the right side of the page and the interviewer's "thoughts" regarding each statement on the left. Notice that the comments along the left column report how the counselor-executive is going to structure the interview. See how he changes his own observations of the trouble into the words he uses in speaking with the client.

COUNSELING INTERVIEW

John Milton graduated from college two years ago. After commencement he worked at several odd jobs for a year and then took a job as operator of a semi-automatic machine in the Burr Gear Company. He is the only college man in his department; most of the other men are illiterate. His production has been very erratic, some months slightly above average, other months considerably below. He is paid on a piece-rate basis. He apparently dislikes his work, since he is absent frequently and seems to criticize the company and industry in the presence of his fellow employees. The foreman has recommended him for discharge but suggests that one of the higher executives talk to him in order to have him realize where he stands. A personnel executive sends for him. The following conversation takes place:

Principles of Interviewing Stated and Illustrated in the Executive's Thinking	*The Conversation*
I'll have to get at the trouble from his point of view.	*Personnel Executive:* Mr. Milton, I have a report from your foreman which indicates that you are not very happy here. You appear to be dissatisfied with your job. Perhaps we should have had a chat before this but we didn't, and now is your chance to open up and tell me what you think of your work here. Let's be frank about it; we can make more headway than if either of us holds back his grievances. Besides, I want

He doesn't open up.

to assure you that you can be frank with me.

John Milton: Why, I guess everything is all right. I don't think there is any need to be frank. I do my work and that seems to be all that is expected of me.

I'll have to get his confidence.

P.E.: No. According to the report I have, things are not all right. Your attendance and your production records indicate that you do not enjoy your work. Perhaps you are not satisfied with your job. Perhaps you expected something different when you finished college. I know that I did. It took me several years after I got out of college to get my feet on the first rung of the industrial ladder. As I look back now, I can see that I could have saved considerable time and made better progress if I had had a friend to talk to. Maybe you're in the same boat. Perhaps you are not well, or worry about some personal problem.

I'll get him to express himself by suggesting the wrong causes for his dissatisfaction. If he corrects me, he will have to tell me the real nature of the difficulty.

J.M.: No, my health is good. I'm not worried about anything in particular except the fact that I came here with big ambitions. In college, I was told that the world is waiting for hard-working, educated fellows, but I haven't found it so. I guess I was full of a lot of false enthusiasm. I'm working among a lot of dumb Bohunks who are stronger than I am. They work all day and don't mind it. When I work as fast as they do, I have to drag myself home at night. I used to think that if I got an education and worked

Most of these foreigners in that department are good physical specimens. Only a giant could do more work than they do.

The old story—college man expects a promotion just because he's a college man. He hasn't grasped the competitive nature of life.

I'll have to build up his ego before I can help him.

Let him get rid of all the poison in his system.

The perennial alibi—drag. Perhaps that is a good starting point for us to get together.

Ignore the "barbs" that are not important.

Ask him some questions to which he answers yes.

hard I'd be promoted; but I haven't seen any promotion even when I did try for it. So far as I can see, a college education doesn't mean a thing on that kind of work.

P.E.: Thanks, Milton. I'm glad you are frank. I'm beginning to see your point of view. If only everyone would be as honest as you are, we could avoid a lot of unhappiness. College, or something, has made you more willing to state facts as you see them. Now that you have told me about some of the difficulty, tell me more. How about your relations with the foreman? Has he treated you squarely?

J.M.: Oh, yes, he's okay. I feel sorry for him. He's been here for fifteen or sixteen years, and he's still a foreman. He doesn't seem to have any drag either.

P.E.: No, he doesn't have any drag and he doesn't want any. Neither do you. You wouldn't feel so proud of yourself if you gained a better job through unfair influence as you would if you won it on ability, would you?

J.M.: No, I wouldn't, but even that might be better than competing with the physical giants in my department.

P.E.: Only as an escape from an unbearable situation. Now let's see whether we can get straightened out on the value of your college training. You spent four years in college and you enjoyed it while you were there; or didn't you?

J.M.: I enjoyed it very much.

P.E.: Did you learn some things you didn't know before?

J.M.: Sure, lots of them. In the classroom and outside.

P.E.: Think of your freshman year. Did you have some difficulty in getting adjusted to college? Was it different from high school?

J.M.: Sure. It took me several months to like it.

We have to get together on one point even though it is a minor one.

P.E.: Would you agree that the step from college to industry is more difficult than the step from high school to college?

J.M.: You bet. Much harder for anyone.

P.E.: It was for me, too. It took me a long time to realize that I had three choices: I could work for the company, I could "work" the company, or I could work with the company. Let me write them on this sheet of paper so that I can make them clear. (Writes them on paper.) In the past, you have been working for the company. You did what you had to do for the wages you received. You did not enjoy the work and you could not do so with your present point of view. To some extent, you worked the company when you held on to your job but did not work regularly. However, you might have tried to work us far more by catering to your foreman, tattling on the other fellows, or by restricting output through ostensible breakdowns of the machine you operate. You didn't do those things and I'm glad you are too much of a man to do them.

Here's the crucial stage. I'll have to illustrate this so clearly that he will want to feel himself a part of the concern.

Ignore the fact that he tried to up-set the morale of his fellow workers because he won't do that if I can enable him to express himself through his job.

His objection is evidence of interest.

He can realize that any job may be satisfying if it has pleasant associations.

Let's face the facts, pleasant or un-pleasant.

He has a real opportunity in his

J.M.: No, sir. I've played straight there.

P.E.: Fine. However, you failed to work with us. That is, you did not consistently and wholeheartedly work just as though you gained self-expression from your job.

J.M.: How could I gain self-expression from a job I don't like?

P.E.: By recognizing the fact that the nature of any man's work is secondary to the meaning of the work to him. You will agree with me, I believe, when I say that almost any person would be glad to run the machine you operate if he believed that he was the only man in the world who could run it and if he were pointed out as the outstanding man in that work. Let me assure you that the nature of the work is incidental; the meaning of the work is most important. One can give his job meaning by one of three methods: First, he can do it better than anyone else. Second, he can improve the job by inventing a better machine or system to do the work. Third, he can improve the human relations in the job.

In your case, you cannot do the first because the other men are physically stronger than either one of us. You cannot do this, second, because you are not an engineer nor are you trained in production management. But you would do well to study the latter and see whether you could improve our production system.

Your best chance is the third:

present situation, if he can utilize it.

People learn to admire those who admire them.

Every man has something to give other men if he can learn how to give it.

Let him make the decision.

namely, learn to understand how to influence the employees here. You may consider them Bohunks now, but the place and time to learn how to handle men is the place and time in which you happen to be. If you want to become an executive, you will have to conduct yourself in a manner which will cause those men to like and respect you.

J.M.: That sounds all right. But how am I going to get them to admire me?

P.E.: By deserving their admiration. Study them and some of their customs. Realize their problems and you'll forget your own. Visit them in their humble homes. Let them give you some of their fine qualities. You, in turn, can give them some of your qualities.

J.M.: What can I give them?

P.E.: Things you have that they do not have—your education. College should have given you some information in economics, psychology, sociology, and other fields. Find out what things interest them and contribute in simple language the things they want and need. Help them to learn to read and do simple arithmetic. Some of them came to America because they thought it the land of opportunity. Lose yourself in helping them and you will thereby find yourself in this company. There is the opportunity. Do you want to take it or to run away from it?

J.M.: Can you explain the whole situation in more detail?

P.E.: I'll try. Perhaps we can both

understand the problem and solution if we diagram it. (Draws a diagram and explains it. The evasive, substitute and retreat activities of J.M.'s behavior are explained, and then direct attack is offered as the one sound form of adjustment. The adviser also presents any ideas that he believes to apply.)

J.M.: Sounds pretty good. I never thought of my job as having any opportunity in it. I'll try it.

Let him know that someone is following up his progress.

P.E.: Do it. I know you can if you will. You have the intelligence. All you need is the attitude and desire You'll find ways of doing it. Tell me how you get along. Come to see me a month from now. In the meantime, I'll hear of your activities.

J.M.: Thanks. I'll think it through and see what I can do.

Any problem in industry may be integrated for the advantage of all parties.

P.E.: Do so. Remember that when you help these other men, you also help yourself and this company. All of us will rise in ability as well as in satisfaction. Good-bye and good luck.

J.M.: Good-bye.[6]

This interview was presented to enable the reader to infer some of the techniques, good or poor, which the interviewer uses in guiding the discussion. It is interesting to note that the personnel executive did most of the talking. Near the end of the interview he became somewhat directive, suggesting to Milton what he should do, even though he was thinking that Milton should be allowed to make his own decision. Recording interviews like this permits the interviewer to become critical of his own technique and errors in phrasing questions.

[6] Reprinted by special permission from *Psychology applied to life and work*, Second Edition, by Harry Walker Hepner, pp. 164–168. Copyright, 1941, 1950, by Prentice-Hall, Inc.

Giving Orders

Pigors considers order-giving to be the heart of technical communications. Pigors maintains:

> Perhaps the most important level of order-giving is that of the first line supervisor. His orders are a constant influence on the feelings and behavior of workers. And certainly there is room for improvement in the attitude and skills with which this influence is exerted.
>
> Bossiness is a prevailing weakness in this order-giving. It sets up unnecessary and oppressive restrictions. Nowadays nobody ever tells the foreman in so many words to throw his weight around. In fact, when there is any talk on the subject at all, its emphasis is quite the reverse. Handle the men with gloves on if you see they're touchy, and keep the union out of your hair. . . . But an intelligent foreman knows that official words do not tell the whole story. He has to be a more adept student of communication if he wants to hold his job. He gets practical information about top management's policy and pet procedures through a medium more direct than words.[7]

We suggest a more specific and meaningful term—the interview. The interview is the procedure by which orders are normally given. Written orders, to be sure, are effective in dealing with highly literate and intelligent management groups. However, it has been found that in some plants the rate of reading ability of foremen themselves is low. In one plant it was found that about 40 per cent of the foremen had a reading ability equivalent to the eighth grade or lower.[8]

Pigors lists seven component phases that need to be carried out in order-giving. The first four of them follow:

1. To plan. (How, when and where shall action be carried out and who shall do it?)
2. To prepare. (Materials may need to be prepared. Order receiver

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[7] Paul Pigors, *Effective communication in industry* (New York: National Association of Manufacturers, 1949), pp. 26–27. Reprinted by permission of the Association.

[8] Roger M. Bellows, *Psychology of personnel in business and industry*. New York: Prentice-Hall, Inc., 1949), p. 349.

must be. Perhaps this is only securing of attention as the Navy's "Now hear this" or it may be helping an individual with what he needs to learn, or to feel.)

3. To present the order itself. (This summarizes planning and perhaps preparation also. As a statement, the order should be brief, precise, authoritative, and courteous.)
4. To verify reception. (This means testing the understanding and consent of the person who is to act on the order. Has he a clear grasp of facts? Is he making an inappropriate response in feeling?) [9]

These four phases of order-giving are similar to phases of interviewing. Planning and preparation are two of the important phases of interviewing. To present the order itself is the verbal presentation in the interview. Number 4, the "follow-up," is a check on understanding during the interview.

Employee Attitude Surveys

Enlightened managements, not only of business enterprises but also of organized labor, are interested in what the worker thinks, how he feels, and what his opinions are on various issues. The answers to these questions may be obtained, generally speaking, by two kinds of systematic devices: the interview and the questionnaire or attitude-scale procedures. Some managements work on an informal basis and try to determine the employee's attitudes by rumor or by unsystematic guessing as to what the worker is thinking about. We have noted that the counseling interview has been used, especially in some companies, with marked success.

The unguided interview, not necessarily of the counseling type, can yield valuable information as to employee attitudes. This was the procedure at the Hawthorne Plant of the Western Electric Company at the beginning of the studies there in the 1920's. The employee was allowed to talk about anything he wanted to during the interview. Free interviews of this type are quite long and time-consuming; it is also difficult to record the results of

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[9] Pigors, *op. cit.*, pp. 29–30. Reprinted by permission of the National Association of Manufacturers.

the free or unguided interview. Another disadvantage of the free interview is that it requires a greater degree of training on the part of the interviewers. Results of the free, unstructured interview are difficult to tabulate and interpret.

The guided interview is somewhat more systematic. While it does have the disadvantage of not yielding "depth" (the more fundamental reasons for attitudes as expressed by an employee), it does lend itself better to tabulation, quantification, and perhaps interpretation of results.

In the guided or structured interview designed for surveying attitudes the interviewer covers each of a number of specified topics during the conversation. A skillful interviewer is able to make the interviewee feel that such an interview is unguided. It takes less time than the free or unstructured interview. Certainly both types of interview are subject to the personal prejudices and contagious bias of the interviewer.

Summary

In addition to employee selection, the interview has many personnel uses in the management of business and industry. The same interview techniques are used for the placement and classification of employees as are employed for their original selection. Verbal communications are passed from management to employees, orders are given, and policies are interpreted by use of interview media. Indoctrination and on-the-job training given by the foreman or supervisor to the new employee through interview are subject to some of the same pitfalls which inhere in the employment interview.

Grievances are frequently settled by contacts between the foreman or supervisor and the employee long before the complaint gets large enough to be handled by formal grievance machinery. If there are obstructions at this point which hamper clear understanding on each person's part, the interview will fail, pushing the complaint along to full-sized grievance status. Many of these petty dissatisfactions are settled routinely through interview counseling devices. The supervisor may act as a counselor, although more and more companies are recognizing the value of having a special counseling staff manned by trained interviewers.

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